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RESEARCH IN APPRENTICESHIP TRAINING, PROCEEDINGS OF A CONFERENCE (MADISON, WISCONSIN, SEPTEMBER 8-9, 1966).

BY- BECKMAN, ANN C. QUIRK, CATHLEEN
WISCONSIN UNIV., MADISON

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THIRTY-THREE PERSONS PARTICIPATED IN THE RESEARCH CONFERENCE ON APPRENTICESHIP TRAINING COSPONSORED BY THE OFFICE OF MANPOWER POLICY, EVALUATION, AND RESEARCH, U.S. DEPARTMENT OF LABOR, AND THE CENTER FOR STUDIES IN VOCATIONAL AND TECHNICAL EDUCATION, THE UNIVERSITY OF WISCONSIN. THE OBJECTIVES OF THE CONFERENCE WERE TO (1) PRESENT THE FINDINGS OF OBJECTIVE, SCHOLARLY RESEARCH ON APPRENTICESHIPS, (2) PROVIDE BALANCED PARTICIPATION BY BRINGING TOGETHER REPRESENTATIVES FROM UNIVERSITIES, GOVERNMENT, LABOR, AND MANAGEMENT, AND (3) STIMULATE A DIALOGUE AMONG THE VARIOUS GROUPS INTERESTED IN APPRENTICESHIP TRAINING. PAPERS PRESENTED WERE--(1) "APPRENTICESHIP IN THE UNITED STATES, LABOR MARKET FORCES AND SOCIAL POLICY," BY D.J. FARBER, (2) "APPRENTICESHIPS AND THE AMERICAN LABOR MOVEMENT," BY V.E. JIRIKOWIC, (3) "THE PURSUIT OF EXCELLENCE IN APPRENTICESHIP TRAINING, RESEARCH, PROCEDURES, INSTRUMENTS, AND CHALLENGES," BY A.S. DREW, (4) "RELATED INSTRUCTION, BASIC PROBLEMS AND ISSUES," BY G. STRAUSS, (5) "A STUDY OF REGISTERED JOINT APPRENTICESHIP COMMITTEES IN WISCONSIN BUILDING TRADES," BY A.C. FILLEY, (6) "A PERSPECTIVE ON APPRENTICESHIP TODAY," BY HUGH MURPHY, (7) "INCREASING APPRENTICESHIP OPPORTUNITIES THROUGH PREEMPLOYMENT TRAINING," BY J.S. MCCAULEY, (8) "NATIONAL AND STATE APPRENTICESHIP, 1960-1966, UP TO DATE OR OUT OF DATE," BY F.F. FOLTMAN, (9) "NEGRO PARTICIPATION IN APPRENTICESHIP PROGRAMS," BY R. MARSHALL, AND (10) "THE NEGRO APPRENTICE TRAINING PROGRAMS, AND TESTING," BY I. KOVARSKY. THE DISCUSSIONS FOLLOWING EACH PRESENTATION ARE INCLUDED. THIS DOCUMENT IS AVAILABLE FOR $3.00 FROM THE CENTER FOR STUDIES IN VOCATIONAL AND TECHNICAL EDUCATION, SOCIAL SCIENCE BUILDING, 1180 OBSERVATORY DRIVE, MADISON, WISCONSIN 53706. (HC)

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THE UNIVERSITY OF WISCONSIN

1967

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PREFACE

The papers included in this volume were presented at the Research Conference on Apprenticeship Training held in Madison, Wisconsin, in September 1966. The conference was co-sponsored by The Office of Manpower Policy, Evaluation, and Research, U. S. Department of Labor, and the Center for Studies in Vocational and Technical Education, The University of Wisconsin. *

In arranging the conference we sought several objectives. First, the conference was designed to present the findings of objective, scholarly research in a field where past controversies have usually shed more heat than light. Second, the conference attempted to provide balanced participation—both in presentations and attendance—by bringing together representatives from universities, government, labor, and management. Third, we wanted to stimulate a dialogue among the various groups interested in apprenticeship training.

Research reported covered a wide spectrum. Apprenticeship training was discussed from the broad perspective of the labor marked. Particularly important here was the identification of forces which have controlled the supply of and demand for apprentice-trained labor. Papers also dealt with more specific problems. Reports covered such topics as the problems of related instruction, the role of joint apprenticeship advisory committees, the use of pre-apprenticeship training, and the experience of minority groups in apprenticeship.

As might be expected, the discussion of these topics resulted in controversy and debate. Participants accustomed to hearing the virtues and past successes of apprenticeship extolled in their own local groups, objected to reports which showed the decline in apprenticeship training and serious problems connected with such training. The reports of factual evidence were criticized as "academic," biased, pessimistic, or unsympathetic. Moreover, participants deeply involved in the use of apprenticeship training were shocked when an audience member suggested that such plans be abandoned altogether.

Quite naturally too, participants often objected to what they viewed as an imbalance or parochialism in the statements of others. Papers

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*One paper, "Apprenticeship and the American Labor Movement" by Vernon E. Jirikowic was not presented at the conference, but has been included here at the request of Howard Rosen, Director of Research, Office of Manpower Policy, Evaluation, and Research, U.S. Department of Labor.

related to craft apprenticeship training seemed to ignore the role of industrial programs. Reports of state or area programs were felt by some to have little relevance to problems in other states or areas. Practitioners often felt that academicians were too general, while labor groups felt that their views received less attention than those of management.

The net result of the research reports and discussions seems to be clearly positive, however. A number of the papers presented may be viewed as important and lasting additions to our body of knowledge on the causes, consequences, process, and results of apprenticeship training in the United States. Moreover, in assembling university research investigators, government officials, and union and management representatives—all with a basic interest in apprenticeship—the conference served to promote communication and to provide a greater mutual understanding of the problems involved. Discussion by union and management representatives of the issues presented gave concreteness to those issues, while the objectivity of research reports served to underscore evidence which may have been ignored by practitioners in their day-to-day confrontation with local issues.

The structure of apprenticeship today is one of diverse and often unrelated state, federal, and local programs. Innovations in one part of the country have remained uncommunicated to those dealing with similar programs elsewhere. We hope that the exchange of ideas presented at the conference will familiarize readers of this volume with current apprenticeship trends and problems, and assist investigators in identifying new directions for further research.

Alan C. Filley
Associate Director
Industrial Relations Research Institute
The University of Wisconsin

Madison, Wisconsin
March 1967

PARTICIPANTS

Curtis C. Aller
Director, Office of Manpower Policy,
Evaluation and Research
U. S. Department of Labor

Jack Barbash
Professor of Economics
The University of Wisconsin

A. Harvey Belitsky
The W. E. Upjohn Institute for Employment Research

Joseph P. Corcoran*
Director of Training for Journeymen and Apprentices,
United Association of Journeymen and Apprentices of the
Plumbing and Pipe-Fitting Industry of the U. S. and Canada
(AFL-CIO)

Alfred S. Drew
Project Director, Apprenticeship Research
Department of Industrial Relations
Purdue University

David J. Farber
Assistant Chief, Division of Research
Bureau of Apprenticeship and Training
U. S. Department of Labor

Alan C. Filley
Associate Director, Industrial Relations Research Institute
The University of Wisconsin

F. F. Foltman
New York State School of Industrial and Labor Relations
Cornell University

Ernest Green
Field Director, Apprenticeship Program
Workers Defense League
Brooklyn, New York

Charles F. Hanna
Chief, Division of Apprenticeship Standards
Department of Industrial Relations
State of California—Employment Relations Agency

Adolph Holmes*
Associate Director, Economic Development and Employment
National Urban League
New York City

Morris A. Horowitz
Professor of Economics
Bureau of Business and Economic Research
Northeastern University

Don Irwin
Manager, Personnel Research and Planning
The Chrysler Corporation, Detroit

Paul V. Johnson
Associate Director, Apprenticeship Research Program
Graduate School of Industrial Administration
Purdue University

Irving Kovarsky
Professor of Labor Law
College of Business Administration
University of Iowa

J. Kenneth Little
Co-Director
Center for Studies in Vocational and Technical Education
The University of Wisconsin

Karl O. Magnusen
Research Assistant, Industrial Relations Research Institute
The University of Wisconsin

Garth L. Mangum
The W. E. Upjohn Institute for Employment Research

Ray Marshall
Professor of Economics
University of Texas

John S. McCauley
Director, Office of Manpower Training Operations
Bureau of Employment Security
U. S. Department of Labor

Frederic Meyers
Chairman, Department of Business Administration
University of California, Los Angeles

Hugh Murphy
Director, Bureau of Apprenticeship and Training
U. S. Department of Labor

Frank G. Musala
Director of Apprenticeship
State of Minnesota Industrial Commission

Winn Newman
Assistant to the Executive Director
Equal Employment Opportunity Commission

Charles T. Nye
Director of Apprenticeship
State of Wisconsin Industrial Commission

Herbert A. Perry
Assistant Professor of Economics
Sacramento State College

Donald Slaiman*
Director, Civil Rights Department, AFL-CIO
Washington, D. C.

Gerald G. Somers
Co-Director, Center for Studies in Vocational and Technical Education
The University of Wisconsin

George Strauss
Professor of Business Administration
University of California at Berkeley

Sol Swerdloff
Chief, Division of Manpower and Occupational Outlook
Bureau of Labor Statistics
U. S. Department of Labor

Joseph Tuma*
Executive Director
Upper Peninsula Community Action Program
Escanaba, Michigan

Leon S. Tunkel
Director, Division of Manpower
State of New York Department of Labor

Don Vial
Chairman, Center for Labor Research and Education
University of California at Berkeley

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*The written comments of this discussant are not included in this "Proceedings."

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Section I

Garth L. Mangum, Chairman

APPRENTICESHIP IN THE UNITED STATES: LABOR MARKET FORCES AND SOCIAL POLICY

DAVID J. FARBER*

U. S. DEPARTMENT OF LABOR

ABSTRACT

This article is concerned with the extent to which the apprenticeship program responds to short-run changes in the U. S. economy. Mr. Farber shows that the number of new apprenticeship registrants varies inversely with the level of unemployment in the economy as a whole. The apprentice-completion rate, however, varies directly with the level of unemployment, inversely with changes in inter-industry mobility, and directly but not significantly with wage differentials between skilled and semi-skilled workers. These relationships suggest that participation in apprenticeship does respond to changes in the economy, and that the role of labor unions in apprenticeship may have been overstated.

The author questions the general concern with apprentice dropout rates. An ideal completion rate is presumably one which satisfies precisely present and projected demand for skilled workers. A fair assessment of whether dropout rates are too high requires the construction of accurate projections of demand, the difficulties of which are numerous.

In discussing Mr. Farber's paper, Mr. Belitsky is critical of some of his generalizations and suggests that apprenticeship

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*The author's views should not be ascribed to the institution he serves. Mr. Farber wishes to acknowledge the assistance of Mr. Rufus Daniels, Statistician, Bureau of Apprenticeship and Training, who prepared the correlation and regression coefficients and assisted with the statistical analysis.

Mr. Farber is Assistant Chief of the Division of Research, Bureau of Apprenticeship and Training. Mr. Belitsky is with the W. E. Upjohn Institute for Employment Research in Washington. Mr. Barbash is Professor of Economics at The University of Wisconsin.

should be both regarded and acted upon more consistently as a form of individual and social investment, while Mr. Barbash enlarges briefly on the nature of unions' interest in apprenticeship.

The American apprenticeship system has been evaluated from many perspectives: as a system of job control; as a method of vocational education; as a monopoly of a privileged ethnic majority; as a fossilized form of nepotism in the job market; as an instrument of manpower policy; as a ritual similar to the puberty rites of cultures more primitive than our own; and, I suspect, from still other vantage points as well.

Economic analyses dealing relatively vigorously with apprenticeship as a phenomenon of the labor market have been conspicuous by their absence. Most frequently, these analyses have been limited to a comparison of the current number of apprentices with a projection of future demand for craftsmen. With respect to apprenticeship in the labor market of today—as a response to the present forces of supply and demand in the current job markets—these analyses are either silent or else content themselves with calling attention to the convention that statistics on apprenticeship are not notably reliable.

The fact that apprenticeship is rarely, if ever, analyzed by labor economists in terms of the current state of the labor market is, or should be, the occasion for some surprise. Apprenticeship, under most labor agreements which deal with the subject, would appear to be related to the number of craftsmen. Nonetheless, competent economists have concluded that the apprenticeship ratio provisions of these agreements

> seem to have had virtually no effect on the number of journeymen. The number of apprentices has been small but this has been due to the reluctance of most employers to train skilled workers rather than to union policies. Indeed, nonunion employers who were free from union restrictions have trained fewer apprentices than did union employers.[1]

Under these circumstances, investigation of the factors affecting the number of apprentices might more properly be regarded as the province of industrial or management psychology. Or perhaps, if we accept at face value the view of the latter-day Cassandras that the apprenticeship system is a catatonic fossil, we must assign such an inquiry to psychopathology.

And yet, I confess to the feeling that a sound instinct prompts the economist to maintain the belief that a minimal rationality does underlie the job market, including the supply of and demand for apprentices. For although the apprenticeship system is a type of vocational training,

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1. Slichter, Healy, and Livernash, *The Impact of Collective Bargaining on Management* (Washington: Brookings Institution, 1960), p. 74.

the system is operational only as a form of employment and as such should be as susceptible to the forces of the labor market as other forms of employment.

I am aware, of course, that to the empirical economist the labor market is not very rational; it is a Sargasson Sea, full of "rigidities" which inhibit or preclude the free interplay of the forces of the market place. I am also aware that efforts to correlate empirically changes in employment levels with those in wages have been spectacularly unsuccessful.[2] Most frequently, economists explain the failure of empirical wage and employment data to conform to their theoretical expectations as the failure of *ceteris* to be *paribus*. Without recourse to the ritual of *ceteris paribus*, many economists no doubt would surely have succumbed to the currently fashionable existentialist despair.

It is conceivable, however, that existentialist despair is premature, that the labor market is not in a nihilistic chaos, and that, at least in the case of apprenticeship, a certain degree of rational economic behavior can be discerned and measured. In this paper, I propose to consider some of the essential elements of a simplified economic model of the American apprenticeship system. My purpose is to seek evidence of the extent to which apprenticeship responds to certain short-run changes in the economy. Put somewhat differently, I propose to explore the ability of the apprenticeship system to adjust to change, which, if I remember correctly, is one of the classic definitions of intelligence. Perhaps, too, I should explain that like other builders of economic models, I make certain "simplifying assumptions," to wit: that apprentices are human beings, many of whom prefer the satisfaction of immediate wants to the gratification of future needs; that employers hire more workers when they need them; and that workers like higher wages. Lastly, in this economic model, labor unions are nonexistent and apprentices enter and leave their employment solely on the basis of an agreement between the individual employer and the individual apprentice.

New Apprenticeship Registrants

Despite the fact that there appears to be no correlation between the number of new apprentice registrants and annual average employment of craftsmen—and please note that I did *not* say the *number* of employed craftsmen—a glance at Figure 1 may be rewarding. The index of annual average employment of craftsmen from 1947 to 1965 rises only slightly,

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2. See, for example, Allan M. Cartter's statement that "A general wage increase may increase, decrease, or leave unchanged the level of employment." *Theory of Wages and Employment* (Homewood: Richard D. Irwin, 1959), p. 150.

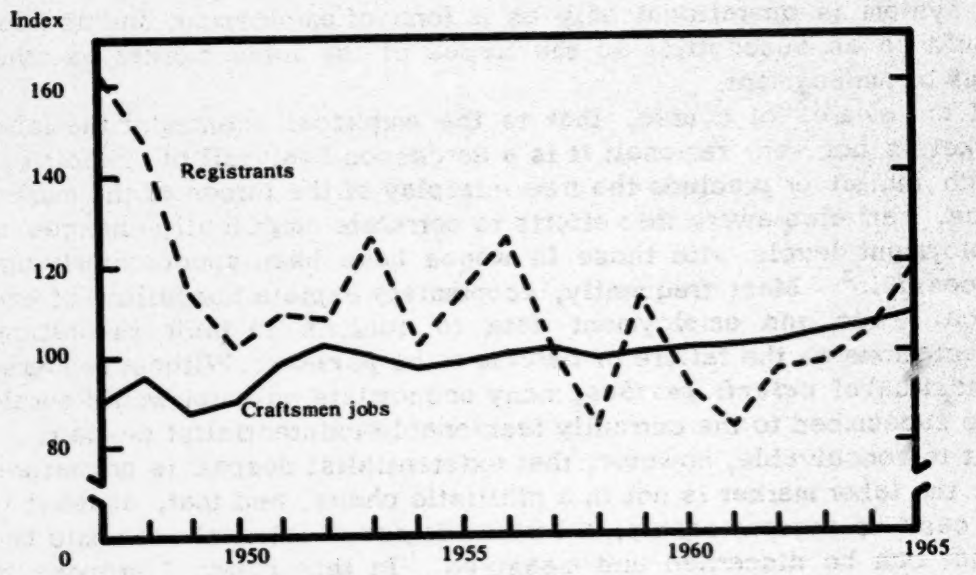

FIGURE 1.

Index of the Number of New Apprentice Registrants and of Annual Average Employment of Craftsmen, 1947-65 (1957–59 = 100)

at best. The index of new apprentice registrants, on the other hand, shows sharp fluctuations from one year to the next, dipping regularly and recurringly in 1948–49, in 1953–54, 1957–58, and in 1960–61 (Table 1).

Figure 2 suggests that apprenticeship is not necessarily as irrational or as arbitrary as might be supposed, nor is it immune from the vicissitudes of the market place. There appears to be ample warrant for the first of the hypotheses on which we may construct our economic model. ***The number of new apprentice registrants appears to vary inversely with the level of annual average unemployment in the economy as a whole.*** Generally, periods of peak unemployment—1948–49, 1953–54, 1957–58, 1960–61—the recession years—are also periods in which the number of new apprentices ebbs to its lowest level. Conversely, 1953, 1956, 1959, 1962, and 1963–65—years in which the index of annual average unemployment declined—are also years in which the index of new apprentice registrants rose sharply (Table 2).

For the statistical-minded, Figure 3 summarizes this relationship. In general, the 1947–65 period was characterized by recurring and rising levels of unemployment, and, as Figure 2 indicates, by declining numbers of new apprentice registrants. The regression line in Figure 3 is, therefore, negatively sloped. The close relationship between annual average unemployment and the number of new apprentice registrants is revealed by the coefficient of correlation: -.609, significant at the 1 percent level.

TABLE 1

Number and Indices of Annual Average Employed Male Craftsmen and New Apprentice Registrants, 1947–65

Year	Number		Indices (1957-59 = 100)	
	Annual average employed male craftsmen and kindred workers (thousands)	New appentice registrants	Annual average employed male craftsmen and kindred workers	New apprentice registrants
1947	7,565	94,238	90.7	161.2
1948	7,924	85,918	95.0	147.0
1949	7,453	66,745	89.3	114.2
1950	7,482	60,186	89.7	103.0
1951	8,193	63,881	98.2	109.3
1952	8,480	62,842	101.7	107.5
1953	8,325	73,620	99.8	125.9
1954	8,073	58,939	96.8	100.8
1955	8,101	67,265	97.1	115.1
1956	8,457	74,062	101.4	126.7
1957	8,432	59,638	101.1	102.0
1958	8,244	49,569	98.8	84.8
1959	8,349	66,230	100.1	113.3
1960	8,338	54,100	99.9	92.5
1961	8,407	49,482	100.8	84.6
1962	8,455	55,590	101.4	95.1
1963	8,683	57,204	104.1	97.9
1964	8,736	59,960	104.7	102.6
1965	8,951	68,507	107.3	117.2

Sources: ***Manpower Report of the President*** (March 1966), Table A–10, p. 164; and U.S. Department of Labor, Bureau of Apprenticeship and Training, ***Trends in Apprenticeship Registrations, 1941-65.***

Apprentice-Completion Rate

The number of new apprentice registrants, however, represents only part of the "supply" of apprentices who actually complete their terms of apprenticeship. Figure 4 reveals an interesting relationship. Unlike the number of new apprentices—which appears to be inversely related to the level of annual average unemployment—the apprentice-completion rate varies directly with the level of unemployment. The years in which annual average unemployment "peaks" are the years in which the apprentice-completion rates also "peak." Similarly, years

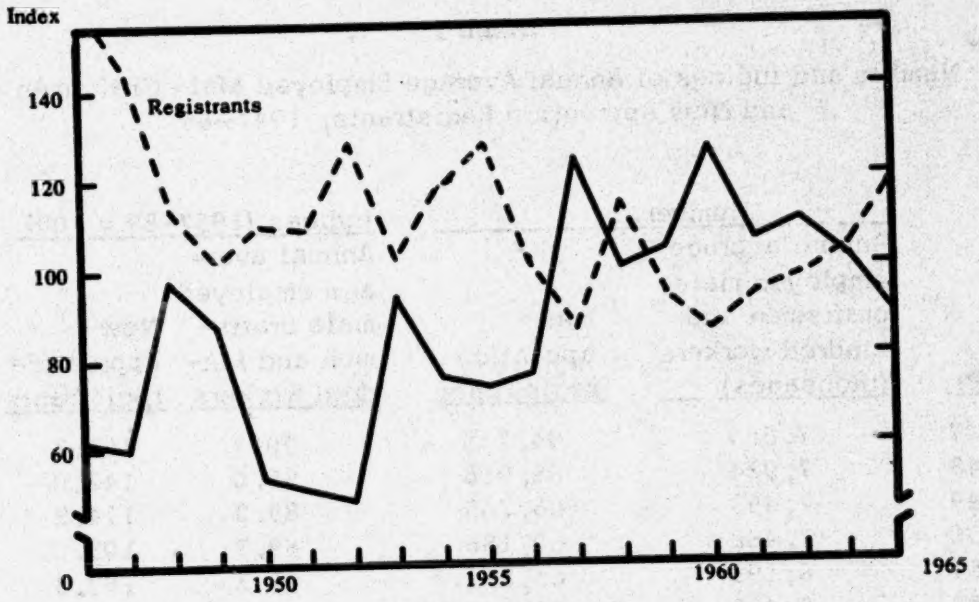

FIGURE 2

Index of New Apprentice Registrants
and of Annual Average Unemployment, 1947–65
(1957–59 = 100)

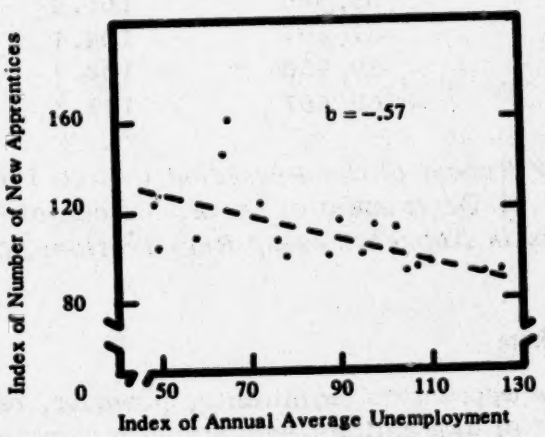

FIGURE 3

Relationship Between Indices of Annual Average Unemployment
and of New Apprentice Registrants, Each Year, 1947–65
(1957–59 = 100)

TABLE 2

Indices of Annual Average Unemployment,
New Apprentice Registrants, and Completion Rates, 1947–65
(1957–59 = 100)

Annual Average unemployment	Index of annual average unemployment	New Registrants Year	New Registrants Number	New Registrants Index	Completees Year	Completees Number	Completees Index	Completion Rates Class of	Completion Rates Rate[a]	Completion Rates Index
2,356	61.8	1947	94,238	161.1	1950	38,533	117.5	1947	40.9	83.1
2,325	61.0	1948	85,918	146.9	1951	38,754	118.2	1948	45.1	91.7
3,682	96.6	1949	66,745	114.1	1952	33,098	100.9	1949	49.6	100.8
3,351	88.0	1950	60,186	102.9	1953	28,561	87.1	1950	47.5	96.5
2,099	55.1	1951	63,881	109.2	1954	27,383	83.5	1951	42.9	87.2
1,932	50.7	1952	62,842	107.5	1955	24,795	75.6	1952	39.5	80.3
1,870	49.1	1953	73,620	125.9	1956	27,231	83.0	1953	40.0	81.3
3,578	93.9	1954	58,939	100.8	1957	30,356	92.6	1954	51.5	104.7
2,904	76.2	1955	67,265	115.0	1958	30,647	93.5	1955	45.6	92.7
2,822	74.1	1956	74,062	126.6	1959	37,375	114.0	1956	50.5	102.6
2,936	77.1	1957	59,638	102.0	1960	31,727	96.8	1957	53.2	108.1
4,681	122.9	1958	49,569	84.8	1961	28,547	87.1	1958	57.6	117.1
3,813	100.1	1959	66,230	113.3	1962	25,918	79.0	1959	39.1	79.5
3,931	103.2	1960	54,100	92.5	1963	26,029	79.4	1960	48.1	97.8
4,806	126.1	1961	49,482	84.6	1964	25,744	78.5	1961	52.0	105.7
4,007	105.2	1962	55,590	95.1	1965	24,917	76.0	1962	44.8	91.1
4,166	109.3	1963	57,204	97.8						
3,876	101.7	1964	59,960	102.5						
3,456	90.7	1965	68,507	117.1						

[a]Calculated by expressing number of completees in an instant year as a percentage of the number of new registrants entering apprenticeship four years earlier.

TABLE 3

Indices of Annual Average Unemployment,
New Construction Trades Apprentice Registrants,
and Completion Rates of Construction Trades Apprentices, 1952–65
(1957–59 = 100)

Annual average unemployment (thousands)	Index of annual average unemployment	New Registrants			Completees			Completion rates	
		Year	Number	Index	Year	Number	Index	Rate[a]	Index
1,932	50.7	1952	33,316	90.1	1955	13,444	68.7	40.4	84.9
1,870	49.1	1953	37,102	100.4	1956	14,588	74.6	39.3	82.6
3,578	93.9	1954	34,238	92.6	1957	17,344	88.7	50.7	106.6
2,904	76.2	1955	47,238	127.8	1958	20,255	103.6	42.9	90.2
2,822	74.1	1956	42,873	116.0	1959	21,067	107.7	49.1	103.2
2,936	77.1	1957	38,506	104.2	1960	16,656	85.2	43.3	91.0
4,681	122.9	1958	34,485	93.3	1961	17,251	88.2	50.0	105.1
3,813	100.1	1959	37,894	102.5	1962	16,477	84.3	43.5	91.5
3,931	103.2	1960	33,939	91.8	1963	15,559	79.6	45.8	96.3
4,806	126.1	1961	33,446	90.5	1964	16,286	83.3	48.7	102.4
4,007	105.2	1962	36,994	100.1	1965	16,201	82.8	43.8	92.1
4,166	109.3	1963	36,763	99.5					
3,876	101.7	1964	38,556	104.3					
3,456	90.7	1965	41,379	112.0					

[a]Calculated by expressing number of completees in an instant year as a percentage of the number of new registrants entering apprenticeship four years earlier.

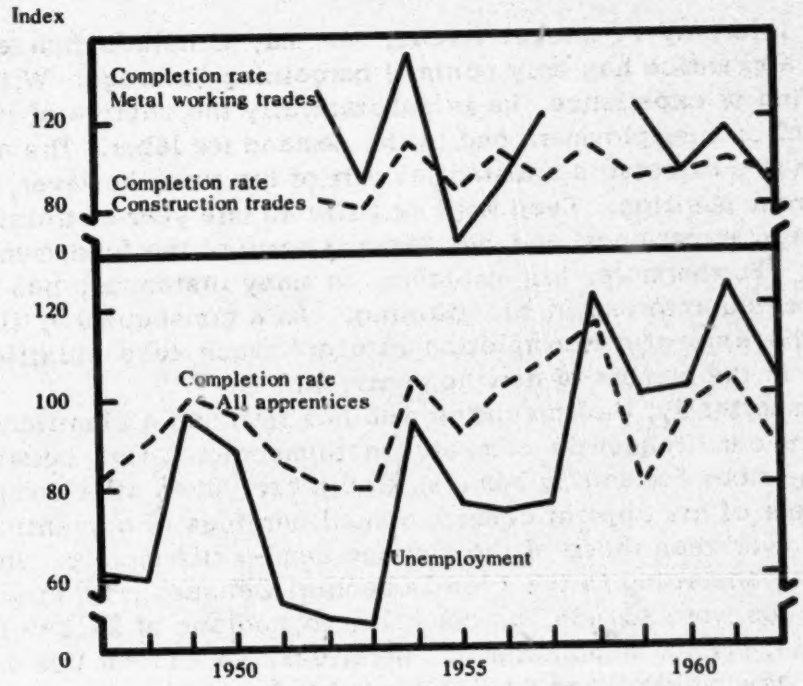

FIGURE 4

Indices of Completion Rate, by Trade,
and of Annual Average Unemployment, 1952–62
(1957–59 = 100)

in which annual average unemployment decline are also years in which the completion rate falls. Interestingly enough, this tendency holds true not only for all apprentices, but also is substantially true for apprentices in the construction trades and the metalworking trades, as well (Table 3).

Apprenticeship and the Job Market

Thus far, we have exposed only the bare skeleton of an economic model of apprenticeship. Essentially, we have hypothesized, the number of entering apprentices and the rate at which they complete their apprenticeship terms are related to the level of unemployment in the economy as a whole. In recession years, when unemployment is high, few employers will agree to the employment of new apprentices, when those already in training on the job, or perhaps even skilled journeymen, may be faced with joblessness. Since apprentices are least productive during the initial year of their apprenticeship terms, employers are likely to be reluctant to hire new apprentices during recession periods. As a consequence, in recession years the number of new apprentices tends to fall.

In the interplay of market forces, we may conclude that a young would-be apprentice has only minimal bargaining leverage. With little or no training or experience, he is substantially the captive of changes in the level of unemployment and in the demand for labor. The apprentice who has completed a substantial part of his term, however, is in a very different position. Even with as little as one year of training, he has garnered experience and has learned some of the fundamentals of his trade. Furthermore, his employer, in many instances, has a substantial vested interest in his training. As a consequence, fluctuations in the apprentice-completion rate are much less volatile than variations in the number of new apprentices.

More importantly, the apprentice who has finished a significant part of his term can frequently compete on terms of relative equality for many of the more demanding semi-skilled jobs. Even after completing the first year of his apprenticeship, annual earnings of apprentices are probably lower than those of the average semi-skilled male. In 1959, for example, according to the 1960 Decennial Census, median earnings of apprentices were $3,486, as compared to medians of $4,299 for operatives, $4,447 for manufacturing operatives, $4,411 for bus drivers, $4,491 for assemblers, and $4,221 for truck drivers.

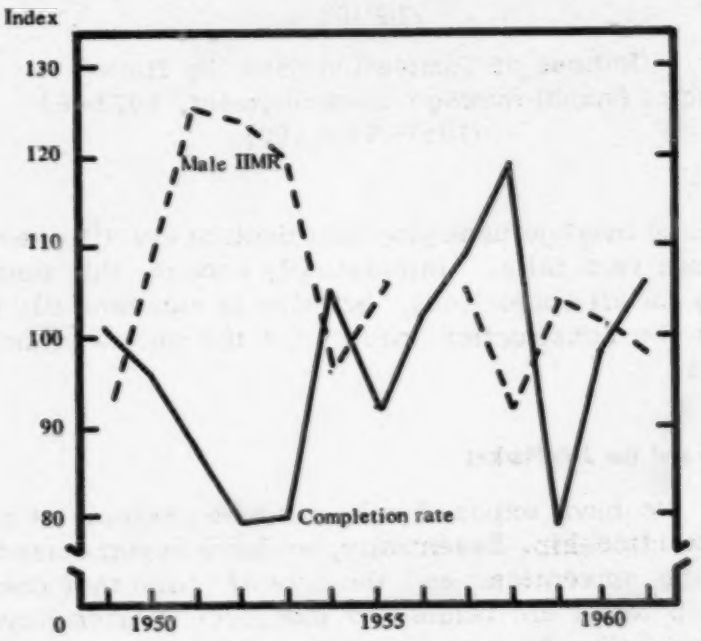

FIGURE 5

Indices of Apprentice-Completion Rate
and of Male Inter-industry Mobility Rate, 1949–61
(1957–59 = 100)

The existence of this differential in annual earnings, particularly in the case of young people, places a severe strain on the ability of apprentices to forego the immediate increase in earnings which would be theirs if they "jumped" their training and became semi-skilled workers. If this hypothesis is valid, apprentice-completion rates should vary inversely with changes in inter-industry mobility and directly with changes in the differential between the wages of craftsmen and of semi-skilled workers.

Inter-Industry Mobility

In Figures 5 and 6, for the 1949-61 period, I have plotted the indices of the completion rates of all apprentices and of construction and metalworking trades apprentices, by the estimated date of entry into the apprenticeship system. Also shown is the index of the inter-industry mobility rates (the IIMR) of all men. The inverse correspondence between changes in the male IIMR and those in the completion rate for all apprentices, as shown in Figure 5, are striking indeed. With the exception of a one-year period during the Korean War—when both the IIMR and the apprentice completion rate moved in parallel fashion—a decline in inter-industry mobility is invariably accompanied by an increase in the apprentice completion rate. Conversely, periods in which inter-industry mobility increases are also periods in which the apprentice-completion rate declines (Tables 4 and 5).

In Figure 6, indices of the completion rates for apprentices in the construction and metal working trades are plotted for 1952–62 and compared with the male IIMR index for the same period. For construction trades apprentices—and to a slightly lesser extent for metalworking trades apprentices—we see the identical inverse relationship between changes in the male IIMR index and the index of completion rates.

Wage Differentials

Consideration of the association between inter-industry mobility and apprentice-completion rates inevitably suggests investigation of the always tantalizing question of the relationship between wages and the employment of apprentices. As I indicated earlier, analyses of the wage-employment relationship have invariably failed to disclose any significant association. To the best of my knowledge, however, such efforts involved a comparison of average hourly earnings and annual average employment data. As I shall attempt to demonstrate in a moment or two, annual average employment is a subtle statistical concept most frequently interpreted as a measure of the number of employed workers (with which interpretation I disagree). With respect to statistics on average hourly earnings, a distinguished labor economist long ago voiced the truism that conceptually, these data do

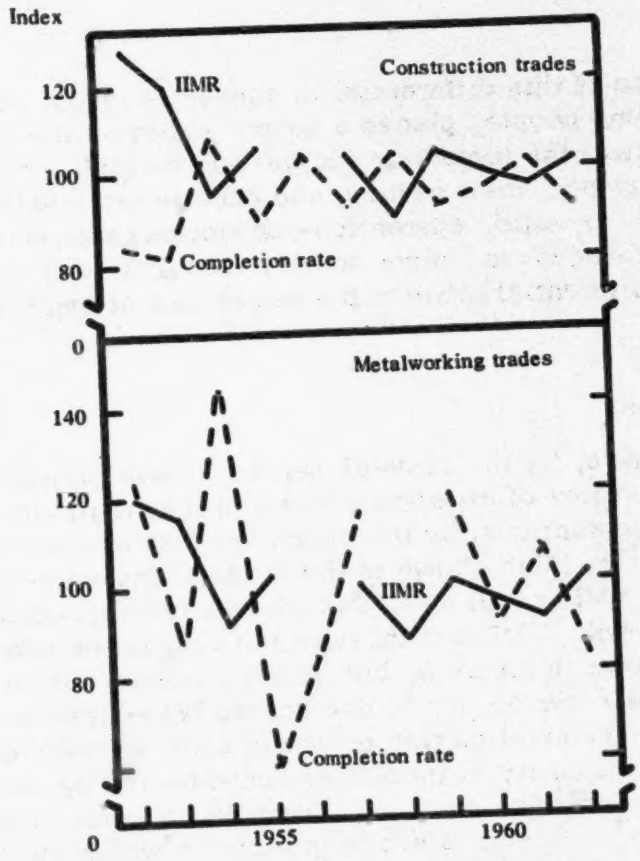

FIGURE 6

Indices of Male Inter-industry Mobility Rate
and Apprentice-Completion Rates in Construction
and Metal Working Trades,
1952–62 (1957–59 = 100)

not indicate either the full cost of labor to the employer or the income measure in which the worker is mainly interested. Discussion with workers indicate that by "wages" they usually mean their weekly take-home pay. This may change considerably without any change in hourly rates because of changes in the work week, [and] changes in various types of premiums... In the same way, the total cost of an hour's work to the employer may vary independently of wage rates.[3]

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3. Lloyd G. Reynolds, "Toward a Short-Run Theory of Wages," *American Economic Review* (June 1948), p. 291.

TABLE 4

Indices of Male Inter-industry Mobility Rate (IIMR) and Apprentice-Completion Rates, 1949–62 (1957-59 = 100)

Year	Male IIMR[a]	Apprentice-completion rate	Index: Male IIMR	Index: Apprentice-completion rate
1949	34.8	49.6	93.0	100.8
1950	40.5	47.5	108.3	96.5
1951	46.9	42.9	125.4	87.2
1952	46.5	39.5	124.3	80.3
1953	44.8	40.0	119.8	81.3
1954	35.9	51.5	96.0	104.7
1955	39.5	45.6	105.6	92.7
1956	—	50.5	—	102.6
1957	39.3	53.2	105.1	108.1
1958	34.2	57.6	91.4	117.1
1959	38.7	39.1	103.5	79.5
1960	37.9	48.1	101.3	97.8
1961	36.4	52.0	97.3	105.7
1962	38.1	44.8	101.9	91.1

[a]Calculated from published and unpublished Social Security Administration data on duplicated and unduplicated industry of employment of wage earners, by two-digit SIC industry.

These considerations suggested that the analysis concentrate on the relationship between annual earnings of apprentices and their employment. The data on inter-industry mobility, however, tended to confirm the hypothesis that many apprentices—particularly those who complete the first year of their terms of apprenticeship—would be likely to choose earning the probably higher wages of semi-skilled workers in the present, as opposed to the potentially higher earnings of skilled craftsmen some two or three years hence. For this reason, it seemed most realistic to investigate the changing differential between the annual earnings of year-round craftsmen and operatives and its relationship to the number of apprentice completees.

A comparison of changes in the earnings differential and in the number of apprentice completees from 1955 to 1964 is shown in Figure 7. In general, there appears to be a fairly close correspondence between changes in the earnings differential and changes in the number of completees. During the first five years of this period, the index of the differential between the median earnings of year-round craftsmen and

TABLE 5.

Indices of Annual Average Unemployment,
New Metalworking Trades Apprentices,
and Completion Rates of Metalworking Trades Apprentices, 1952–65
(1957–59 = 100)

Annual average unemployment (thousands)	Index of annual average unemployment	New Registrants			Completees			Completion rate	
		Year	Number	Index	Year	Number	Index	Rate[a]	Index
1,932	50.7	1952	5,553	95.3	1955	3,617	100.3	65.1	129.3
1,870	49.1	1953	9,143	156.9	1956	4,253	117.9	46.5	92.3
3,578	93.9	1954	6,352	109.0	1957	4,740	131.4	74.6	148.1
2,904	76.2	1955	7,797	133.8	1958	2,541	70.5	32.6	64.7
2,822	74.1	1956	8,058	138.3	1959	3,537	98.1	43.9	87.2
2,936	77.1	1957	8,289	142.3	1960	4,986	138.3	60.2	119.5
4,681	122.9	1958	3,400	58.4	1961	4,719	130.9	n.a.	n.a.
3,813	100.1	1959	5,789	99.4	1962	3,611	100.1	62.4	123.9
3,931	103.2	1960	7,846	134.7	1963	3,799	105.4	48.4	96.1
4,806	126.1	1961	6,819	117.0	1964	3,923	108.8	57.5	114.1
4,007	105.2	1962	8,351	143.3	1965	3,770	104.5	45.1	89.5
4,166	109.3	1963	9,019	154.8					
3,876	101.7	1964	10,704	183.7					
3,456	90.7	1965	14,032	240.9					

[a]Calculated by expressing number of completees in an instant year as a percentage of the number of new registrants entering apprenticeship four years earlier.

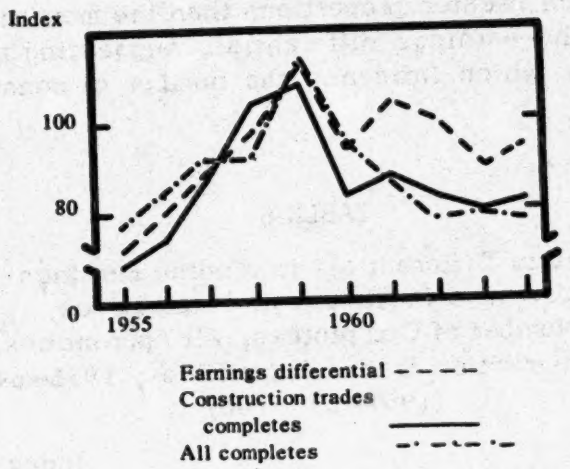

FIGURE 7

Indices of Differentials in Median Earnings of Full-time Craftsmen and Operatives, and of Number of Apprentice Completees, All Trades and Construction Trades, 1955–64 (1957–59 = 100)

operatives rose steadily. From 1960 to 1964, however, despite increases in the median earnings of both groups, the differential tended toward the erratic, displaying some tendency to narrow. The number of completees, as shown by the indices in Figure 7, tended to follow a similar pattern. From 1955 to 1959, the index of apprentice completees rose steadily each year, peaking in 1959. Beginning in 1960, as the wage differential tended generally to decline, the index of apprentice completees also weakened (Table 6).

While there was an over-all general correspondence between the movements of the indices of the wage differential and of apprentice completions, little or no statistically significant relationship can be claimed. In the case of the construction trades, however, there is a decidedly significant correlation between the two indices—.82, significant at the 1 percent level. The direction of each change in the wage differential index corresponds in every instance with the direction of the change in the number of construction trades completees. For each year from 1955 to 1959, the earnings differential index rises, as does the construction trades completee index. From 1959 to 1960, both indices fall; they increase from 1960 to 1961 and decline during the 1961–63 period; and both rise slightly from 1963 to 1964. Until 1959, not only do both indices move in the same direction, but the amplitude of the year-to-year changes is approximately the same. From 1959 onward, however, the extent of change in the index of construction com-

pletees is of much greater proportions than the more modest declines in the index of the earnings differential, suggesting the presence of still other factors which influence the number of construction trades completees.

TABLE 6

Indices of Differentials in Median Earnings of Year-round Craftsmen and Operatives, and of Number of Completees, All Apprentices, and Construction Trades Apprentices, 1955–64 (1957–59 = 100)

	Median Earnings, Year-Round Males				Index of Number of Completees	
			Differential			Construction
Year	Operatives[a]	Craftsmen[a]	Amount	Index	Total	trades
1955	$4,046	$4,712	$ 666	72.1	75.6	68.7
1956	4,235	4,981	746	80.7	83.0	74.6
1957	4,397	5,216	819	88.6	92.6	88.7
1958	4,460	5,365	905	97.9	93.5	103.6
1959	4,607	5,654	1,047	113.3	114.0	107.7
1960	4,977	5,868	891	96.4	96.8	85.2
1961	5,108	6,067	959	103.8	87.1	88.2
1962	5,319	6,251	932	100.9	79.0	84.3
1963	5,480	6,315	835	90.4	79.4	79.6
1964	5,659	6,538	879	95.1	78.5	83.3

[a] From Bureau of the Census, *Current Population Survey*, P-60 Series, various years.

II. PUBLIC POLICY AND ECONOMIC RESEARCH

I turn now to the implications of these hypotheses for public policy and economic research. The fact that it is possible to construct an economic model of apprenticeship without reference to labor unions—admittedly an overly simple one—is not without a certain significance for social policy and economic research. If, as our hypotheses suggest, the number of new apprentice-registrants is indeed inversely related to the general level of unemployment, and their completion rate positively related to unemployment and the craftsmen-operative wage differential, it is entirely possible that the role of the labor unions in the system—whether as villain or as hero, depending on your taste in casting—has been very much overstated. If, as our hypotheses suggest, the basic

parameters of apprenticeship are in fact fundamentally responsive to the general state of the economy and to particularistic forces of supply and demand in the job market, we may conclude that labor unions may at best only influence the apprenticeship system. Perhaps, we may eventually conclude, the number of apprentices entering an occupation is a function of demand for labor, and not a response to an apprentice ratio clause in the collective bargaining agreement. If, as our hypotheses suggest, the apprentice-completion rate is in fact positively related to the level of unemployment and to changes in wage differentials described earlier—we will not castigate the apprenticeship system as a failure because of what we may erroneously believe to be an unduly high dropout rate. So far as I know, no responsible critic has argued, for example, that our system of higher education is a failure because "the national average of those who enter college and fail to finish is estimated at 40 percent."[4] And if we measure the educational dropout rate in terms of the number of high school graduates who do not enter college, the dropout rate no doubt would equal or exceed the apprentice dropout rate. Nonetheless, critics of the apprenticeship system continue to view the apprentice dropout rate as excessive.

The Sin of the Intellectuals

Precisely what a non-excessive rate would be, however, is not made clear. Indeed, I suspect that such a standard cannot be stated explicitly as a norm, because in the minds of many is the thought that apprenticeship should be producing more craftsmen to meet current and projected needs. Under these circumstances, an ideal completion rate is one which presumably satisfies precisely present and projected demands for labor and perforce must therefore fluctuate with each successive change in the projection of demand.

That such projections present certain difficulties will be regarded by most economists as a very considerable understatement. This is particularly true in the case of projections involving craftsmen and the number of apprentices who will be needed in the future. He who undertakes such a projection exhibits valor above and beyond the call of duty and is probably worthy of the Congressional Medal of Honor. Since such recognition is so frequently awarded posthumously, I trust that you will forgive me if I undertake no effort to discuss employment projections *per se*.

As one who has labored in the area, however, I feel it pertinent to conclude my remarks with certain technical observations concerning the nature and characteristics of the raw materials on which such projections are generally based. Usually such projections posit a given growth rate in the economy and in annual average employment in an in-

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4. Martin Meyerson, "The American College Student," *Daedalus* (Summer 1966), p. 720.

dustry or occupation. Retirement and death rates are applied to annual average employment as of the base period, and the number of replacements needed to maintain existing levels of employment are calculated. To the estimated number of replacements, there is then added an allowance for growth. The aggregate of these two factors constitutes total projected demand for labor in the subject industry or occupation.

While it is customary to criticize and warn that such projections reflect, to some degree at least, the judgment of the economist, I confess that I do not share in this caveat. Inevitably, every projection involves judgment. If I decide to walk across the street—even though an automobile a half block away is proceeding in my direction at the rate of 15 miles per hour—I am staking *my* life on *my* judgment as to its trajectory and *my* reflexes.

When we make projections affecting other people and their livelihoods, in a democratic society we feel obliged to minimize judgment and maximize the use of objective statistical data. It is in this statistical area, I believe that we economists—and particularly the economists in universities—regrettably have underplayed our role. One of the most useful functions of the intellectual is that of the critic. And with respect to the statistics concerning employment projections and apprenticeship, I suggest that labor economists have not been as constructively critical of the available data as they might have been. In their zeal to analyze "hot" issues, they have neglected to consider the conceptual underpinning of the statistics on which they base their analyses.

One of the many glaring examples must suffice for the moment. Annual average employment, as I indicated a moment ago, is generally used as the basis for many employment projections. But precisely what does annual average employment represent? Almost unanimously, this term is taken to mean the average number of people employed during the year, and changes from year to year are interpreted as changes in the number of employed persons. I suggest that this concept is not just inaccurate, but that this interpretation may materially affect the nature and level of projected employment.

Construction Data

Let us consider, for example, statistics on employment in contract construction, an industry of special significance to the apprenticeship system. Both the Social Security Administration and the Bureau of Labor Statistics prepare such data. As shown in Figure 8 however, the level of employment as reflected in the Social Security statistics is almost twice as high as in the BLS data. Furthermore, there are differences in the direction of year-to-year changes and almost invariably differences in the magnitude of the changes revealed by these statistics. If both sets of figures are accurate, can they both refer to the same industry and the same workers? And, if they do, can they both be accurate?

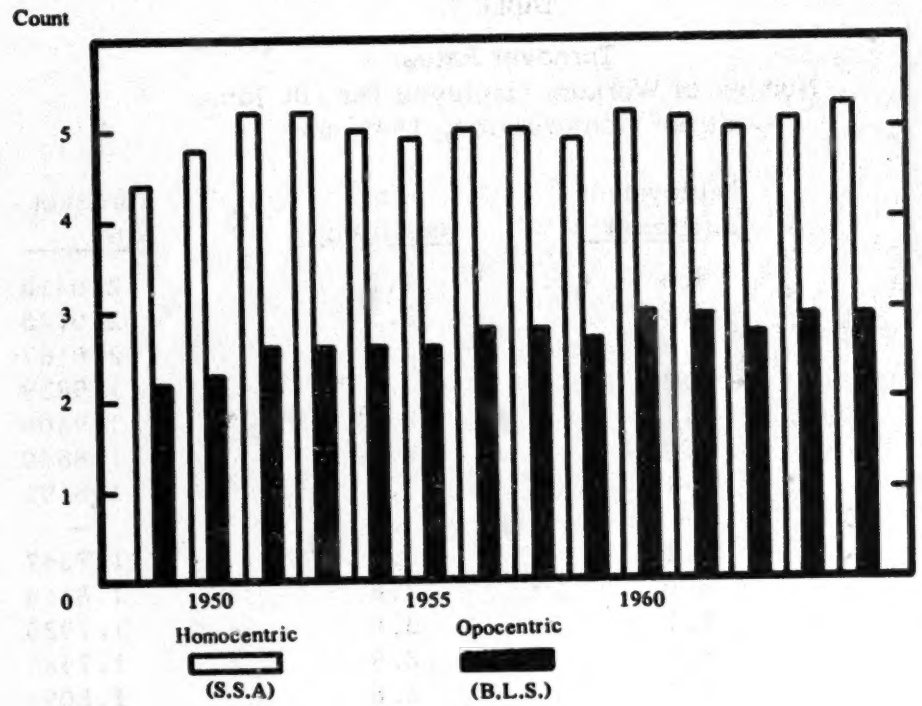

FIGURE 8

Opocentric and Homocentric Employment Counts,
Contract Construction, 1949–63
(in millions)

The answer to both questions, in my judgment, must be "yes." Annual average employment data consist of an average of the 12 monthly reports on the number of workers employed in contract construction. The individual statistics for a given month are therefore homocentric. When averaged for a given year, however, they refer not to the number of *individual* workers employed *during* the year, but to the average number of job incumbents, an opocentric or job measure. Since each incumbent can occupy only one job at a given moment of time, conceptually the annual average employment data represent the average number of jobs filled during a given year. The Social Security employment figures, on the other hand, are homocentric, unduplicated counts of individual workers employed in contract construction at any time during the course of a calendar year. By dividing the homocentric Social Security data by the opocentric annual average employment statistics released by BLS, we are enabled to derive the ratio of the number of workers to jobs. In fact, this is a turnover rate, a means of calculating the employment "value" of jobs in contract construction (Table 7).

In Figure 9 I have plotted the turnover rates in contract construction. These plot points are summarized in the regression line, which is negatively sloped. The significance of these turnover rates for projections of employment, I believe, is readily apparent. Although the number of

TABLE 7

Turnover Rates:
Number of Workers Employed Per 100 Jobs,
Contract Construction, 1949–63*

Year	Employment (millions)	Jobs (millions)	Turnover rate
1949	4.4	2.2	2.0418
1950	4.8	2.3	2.0748
1951	5.2	2.6	2.0167
1952	5.2	2.6	1.9829
1953	5.1	2.6	1.9300
1954	4.9	2.6	1.8840
1955	5.1	2.8	1.8195
1956	—	—	—
1957	5.1	2.9	1.7347
1958	5.0	2.8	1.8114
1959	5.3	3.0	1.7925
1960	5.2	2.9	1.7985
1961	5.1	2.8	1.8094
1962	5.2	2.9	1.7887
1963	5.4	3.0	1.8051

*Derived by dividing OASI unduplicated employment figures for the industry division by the BLS annual average employment data. In effect, the turnover rate represents the number of persons employed during the year per 100 jobs.

jobs—i.e., annual average employment—and the number of workers employed in contract construction have both increased, the job turnover rate has declined. In other words, fewer persons are employed per 100 jobs in the 1960's than were employed in the 1950's. Any projection based on annual average employment data, if this conceptual analysis is at all correct, must be interpreted as a judgment concerning the probable average number of *jobs* which may be anticipated at some future date. From annual average employment statistics we should not expect to make projections of the number of employed persons, unless we assume that turnover, or inter-industry mobility, are non-existent. In a free society, of course, such an assumption, fortunately, is quite unrealistic.

These observations should not be construed as indicating that any particular judgments concerning future increased demand for craftsmen or other workers are incorrect. Nor should it be inferred that realistic employment projections are impossible to construct—quite the contrary. Increasingly, I believe, they will be recognized as indispensible tools of manpower policy.

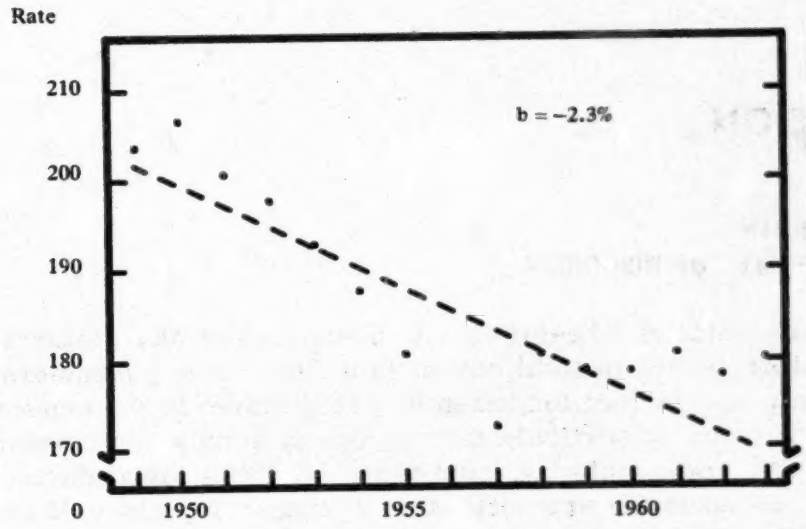

FIGURE 9

Trend in Turnover Rates per 100 Jobs
in Contract Construction, 1949–63

Before confidently asserting that the country will need *X* number in this or that occupation at some future data—and that the apprenticeship system will contribute only *Y* percent of anticipated demand—I suggest that economists would do well to examine the conceptual bases of the statistics which enter into their judgments. If, for example, we assume that the trend in the employment value of jobs in contract construction continues downward, a projected increase in annual average employment of 10 percent might represent an increase in demand for individual homocentric workers of only 8 percent, or perhaps 6 percent.

Conceivably, too, recognition of the effects of job turnover rates—i.e., what I call the employment "value" of jobs—might influence some of our evaluations of the American apprenticeship system and of the difficult function it undertakes to perform.

For in the final analysis, we ask of that system that if undertake to train a sufficient number of young workers on the job at present in order to assure a supply of adequately trained craftsmen to meet future needs. And, frequently, we ask that such employment be afforded young people at a time when unemployment is high and demand for labor—particularly for untrained young people—may be quite low. And so long as employers are expected to pay wages to their employees in a sometimes depressed present—no matter how stringent may be the labor shortages of the future—the economic problems of apprenticeship training will lend themselves to no easy solution, nor, I suspect, to any merely facile formula devised by the mind of man or the ingenuity of the economist.

DISCUSSION

JACK BARBASH
THE UNIVERSITY OF WISCONSIN

The main point of take-off for my discussion of Mr. Farber's illuminating paper is his generalization that "the basic parameters of apprenticeship are in fact fundamentally responsive to the general state of the economy and to particularistic forces of supply and demand in the job market." He concludes, consequently, "that labor unions may at best only influence the apprenticeship system." My aim will be to enlarge briefly on the nature of the union interest in apprenticeship and to check out my generalizations for consistency with Mr. Farber's findings.

Apprenticeship functions in three major contexts of union activity: internal administration and government, collective bargaining, and legislation. At least forty-two national unions constitutionally prescribe apprenticeship as fulfilling a pre-condition of full union membership. These constitutional provisions commonly set, or authorize the local union to set, the minimum period of apprenticeship, the number of apprentices allowed to an employer, the term of apprenticeship, the duration of apprenticeship, and the method by which apprentices are qualified as journeymen members of the union.

The union's main objective in the collective bargaining regulation of apprenticeship is control over the numbers admitted, working conditions, and training. The mechanism for regulation is a joint apprenticeship committee which is usually plant-wide or company-wide in the manufacturing agreements and area- or nationwide in the craft agreements. The functions assigned to the committee include the establishment of training standards, supervision of the apprentice, approval of his progress, and disciplining if necessary. The agreement controls the number of apprentices by prescribing eligibility standards relating to age, education, and union membership, by establishing ratios of apprentices to journeymen per firm, and by setting a fixed term for the duration of the apprenticeship.

Two aspects of training are covered in the agreement: on-the-job training includes a sequence of machines and processes in which competence is to be acquired. Related instruction includes theory of the trade, mathematics, and blueprint reading and is commonly fulfilled on paid time by outside instruction in a vocational school or in some trades through correspondence courses.

The working conditions provisions cover the obligations and rights of the parties at interest, the apprentice's wage scale, probationary period, rules governing lay-off, re-employment, mobility, hours, supervision, and conditions for retention after completion of apprenticeship.

The evidence is that performance probably falls something short of the standards set out in union constitutions and in collective bargaining agreements, in the following respects. (1) Apprenticeship is neither the exclusive nor even the major route to journeyman status in the apprenticeable crafts. (2) The formal contractual ratios of apprentices to journeymen invariably fall short of fulfillment. (3) Only in rare instances does the joint apprenticeship committee actually exercise the full authority granted to it by the agreement, and in any case the union usually dominates the joint committee. (4) Negroes do not participate in apprenticeship opportunities in the degree warranted by their numbers. (5) Kinship is a more important standard for admittance to apprenticeship than is indicated. (6) The related theory segment of the training is frequently neglected. (7) The quality of journeyman instruction to the apprentice is not high.

A group of national unions in the technologically dynamic industries exceeds the routine standards in union constitutions and agreements and goes beyond affirmation of faith in apprenticeship. These unions, to be sure, utilize apprenticeship to regulate the flow of labor into the market for a particular craft. But union regulation is carried on through efficiently managed programs responsive to the technological demands of their industries.

The advanced programs are marked by (a) carefully formulated national union standards, (b) resident schools, (c) specially prepared correspondence courses, (d) financial and technical aid to local unions in improving their programs, (e) apprentice coordinators and training departments in the national unions, (f) apprenticeship contests, and (g) negotiated employer contributions to apprenticeship development funds.

These advanced programs seek to improve the effectiveness of apprenticeship by projecting apprenticeship needs against manpower needs in the craft, using tests to select apprentices, developing creative teaching materials in training apprentices and their instructors, displacing vocational schools in related instruction, and fashioning new apprenticeship programs in the dynamic growth sectors of American industry. Also noteworthy here is the heightened interest of several industrial unions in the development of apprenticeship programs for their craft groups.

Unions use legislation and its administration to advance their interests in apprenticeship. The labor movement started out by being the staunchest supporter of federally aided vocational education and was largely instrumental in the passage of the Smith–Hughes Act in 1917.

But not long after, the unions became unremittingly critical of the quality of vocational education. The union bill of indictment charged vocational education with undermining apprenticeship by training boys in fractionalized skills, excluding the labor movement from participation in the program, catering to anti-union employers, and in general providing a low-quality educational experience. In the contemporary period, the labor movement has been very influential in the passage of legislation modernizing the federally aided program of vocational education and, equally important, in the development of an active manpower policy for which the Manpower Development and Training Act provides the main thrust.

Unions with a significant apprenticeship interest have, however, expressed concern that MDTA is trespassing on modes of training now carried on by private union-management programs, and that some MDTA programs can deteriorate into inferior substitutes for apprenticeship.

The apprentice-oriented unions have been influential in the establishment and administration of what is now the Bureau of Apprenticeship and Training in the Department of Labor, which is the spokesman in government for the apprenticeship principle. BAT and its counterparts in the states draw their personnel in large part from former craft union officials. Craft unions have secured legislation for licensing certain crafts, some of which require apprenticeship as a condition of certification.

The union interest in apprenticeship is a function of its larger interests, which may be identified as: (1) maintenance and improvement of wage standards, (2) security of income and employment, (3) effective participation in the employment decisions of the enterprise, (4) conservation of the union's institutional power, and (5) the advancement of social policy interests.

Union policy in apprenticeship serves the union's wage interests by standardizing craft competence, thus minimizing the undercutting of rates by less skilled journeymen. Enforced apprenticeship maintains wages also by regulating or even restricting the supply of labor for a particular craft. Apprenticeship strengthens employment and income security by making "effective through a wide area, preferably nationwide, a definition of occupational content...which will give wide marketability to skills."

Apprenticeship's main strength in the support of wage rates lies in its susceptibility to union control. So long as the union retains control over labor market entry for a craft, either through apprenticeship *and* union membership, or through union membership alone, it can regulate entry in line with its estimate of demand. The craft union animus against MDTA and other government training schemes is caused not by the possible downgrading of skill standards—most union craftsmen have in fact not completed an apprenticeship—but by the capabilities of these training schemes to augment a competitive labor supply outside

of the union's control structure. Mr. Farber's analysis, however, is not inconsistent with a finding that this craft union control has in general not been exercised irresponsibly and has in fact been responsive to market forces.

It is the union that makes a craft out of an occupation, and apprenticeship is one of the important ways the union does it. Without the union most craft occupations would cease being crafts, that is, the skill content would be diluted, and standards of admission would soon be weakened. The converse is also true. If an occupation is diminished in craft status by a lowering of standards, the union based on the craft is diminished in power as a union. Lacking the union interest, most employers would not retain the crafts with their essential apprenticeship and other standards. It was this union control over craft standards that Frederick W. Taylor's scientific management sought to eliminate by shifting work control from the worker and his union to the management industrial engineer.

Apprenticeship strengthens the union as an institution by enabling the union to provide competent workers to reinforce jurisdictional claims arising out of new technologies. Jurisdiction is not worth much if the union cannot supply workers to do the work called for by the jurisdiction.

Apprenticeship serves social policy interests of unions which go beyond their sectional concerns. Apprenticeship as social policy represents an investment in "human capital" and is an element of an active manpower policy to reduce structural unemployment and underemployment.

Apprenticeship is integrally tied to craft unionism. Indeed, the origins of craft unionism are related to the workers' efforts to curb their employers' attempts to undermine apprenticeship through the use of "green hands" and "2/3rders." Commitment to apprenticeship continues to be a part of the craft union faith at present, and manpower policy is evaluated by whether or not it will undermine apprenticeship.

Apprenticeship's effectiveness as an instrument of union control depends on market-wide enforcement. Three factors contribute to effective craft-union market-wide power: (1) craft unions invariably deal with firms in local markets, which has the effect of sheltering firms from competition and narrowing the geographic area which the union needs to police; (2) local-market enterprises are economically structured as to make them commonly weaker than strong craft unions; (3) once the craft unions have organized the employers, there is little need to organize the workers. It is the workers who must come to the union—rather than the other way around—in order to secure craft employment at a given wage rate.

There is no one undifferentiated union interest in apprenticeship. Craft unions are more likely to exercise apprenticeship controls than are industrial unions, whose interest in apprenticeship is primarily to

hold onto the craft unions within their organizations. For the craft units, control over skill standards and demarcations is a matter of life and death. The industrial union is indifferent to skill as such, as long as the balance of sectional interests in the union is not endangered.

The local union is likely to take a more restrictive view of apprenticeship than the national union. The initiative for the relaxation of apprenticeship restrictions invariably comes from the national union, which is more sensitive to public pressure and sees prospects over a broader terrain. The federation represents the broadest view in liberalizing restrictions and in weighting social policy more than sectional interests.

The period since World War II has in general represented an optimistic phase in the union outlook on apprenticeship, just as the period between World War I and World War II represented a pessimistic outlook. The basic difference is to be found in the contrasting economic situations in these periods. The post-1939 optimism of the unions has been encouraged by high-level employment and the highly visible training urgencies generated first by war production and later by the Negro civil rights revolution, adjustments to technological change, and the active manpower policy of the Kennedy and Johnson administrations. Union optimism has, however, not been sufficient to offset the more basic factors causing the secular stagnation or decline in apprenticeship which shows up so clearly in Mr. Farber's figures.

A. HARVEY BELITSKY*
THE W. E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

Mr. Farber states that his purpose is "...to seek evidence of the extent to which apprenticeship responds to certain short-run changes in the economy." Chiding economists for their apparent neglect, he presents some empirical relationships between the volume of apprenticeship and such economic variables as unemployment levels and wage differentials. The findings, as the author recognizes, are not conclusive. Still, the results suggest the benefits to be gained from additional research, particularly with the more powerful statistical tools of multivariate analysis.

Some of the criticisms that the paper levels at labor economists seem technically invalid. The author asserts, for example, that it "should be the occasion for some surprise...that apprenticeship is rarely, if ever, analyzed...in terms of the current state of the labor market." Why should this situation cause surprise, however? After

*The author's views should not be ascribed to the institution he serves.

all, apprenticeship is a form of long-term investment, not a current and variable expenditure, and is therefore not an ideal topic for analysis "in terms of the current state of the labor market."

If it is sensible, as an economist thinks, to view apprenticeship as a type of investment, useful comparisons and insights may be derived by an examination of certain practices regarding industry's investment in capital goods. The investment plans of business firms tend to be guided by estimates of future demands for products. Therefore, capital outlays commonly are unrelated to short-run changes in the level of unemployment. Yet, according to Mr. Farber, the number of new apprentice registrants seems to vary inversely with the level of annual average unemployment in the economy. If we assume this finding to be firm, we are required to ask: Why should employers treat apprenticeship differently from other forms of investment?

The logic of businessmen's behavior is evident when apprenticeship is recognized as a "speculative" or "contingent" investment. From this viewpoint, an employer should hesitate to enroll new apprentices during a year of even moderate unemployment, because of the uncertain economic future. Even more important is the fact that apprentices may not complete their training or may not remain with the particular firms making the investments. An apprentice, moreover, is not typically long-run or investment-oriented, although his period of training does have some similarity to the education in which, say, an engineering student "invests." But an apprentice is usually dependent upon current income for practically his entire support. Indeed, he chooses a "career" which permits to earn as he learns; he can more accurately be considered current "income-oriented" than "investment-oriented."

Pursuing this approach further, we are not amazed that Mr. Farber finds that "...the apprentice-completion rate varies directly with the level of unemployment." When there is considerable unemployment, income-oriented apprentices are surely anxious to complete their training and remain employed. Employers, for their part, favor recently trained persons, because they are younger and likely to be more familiar with newer techniques. However, when the unemployment rate is low, the interests of the apprentice and employer (and also even trade unions) may diverge. During a relatively prosperous period, the low earnings of apprentices, compared with the wages of operatives and even truck drivers, may become especially irksome. Indeed, Mr. Farber does find that apprentice-completion rates "...vary inversely with changes in inter-industry mobility and directly with changes in the differential between wages of craftsmen and of semi-skilled workers." However, during a period of low unemployment, many employers may react by elevating at least their more advanced apprentices to full journeyman status. To the extent that the latter practice obtains (and many studies have recognized it), Mr. Farber's relationships dealing with apprentice-completion rates may be much less conclusive. Nevertheless, relationships between apprenticeship and some economic variables do

suggest that the volume of this desirable form of training (including its timing) will continue to be inadequate.

This discussant is convinced that improvements in apprenticeship would result if such training were both regarded and acted upon more consistently as an important form of individual and social investment. The following are some of the observations and recommendations which could be considered:

(1) The length of apprenticeship in some trades may be unduly long and thereby self-defeating, whether viewed from the interests of employers, unions, or trainees. Also, in this respect, an expansion of pre-apprenticeship programs (or earning while learning), which utilize industry and school participation, would expand the number and improve the quality of young persons prepared for skilled occupations.

(2) A proposed "Human Investment Act" would grant tax credits for training outlays of business firms and require the maintenance of detailed records on training. The results would be some expansion in the volume of apprenticeship and training and more knowledge of an important dimension of labor supply.

(3) Mr. Farber has misgivings regarding the use of data that fail to distinguish between "opocentric" and "homocentric" employment and earnings. Recognition of such distinctions could enlarge the difficulties of projecting manpower requirements, but careful skill projections do have the same importance for investment in training that market research has for capital expenditures.

(4) The implications of the "investment" in apprenticeship should be more fully known. A high proportion of apprentices have moved from journeyman, foreman, and superintendent to manager-owner. Moreover, with management training (possibly provided by the Small Business Administration), the failure rate of enterprises formed by inexperienced persons could be reduced. Apprenticeship could become an important means of upward mobility for some talented but financially disadvantaged workers.

APPRENTICESHIP AND THE AMERICAN LABOR MOVEMENT

VERNON E. JIRIKOWIC
INTERNATIONAL ASSOCIATION OF MACHINISTS AND AEROSPACE WORKERS

To understand the role of the American labor movement in the establishment and development of apprenticeship programs in this country requires a significant degree of comprehension of the labor movement itself. In fact, it demands a degree of understanding that most are unwilling to undertake. Those of us who have diligently tried to convince employers of the need for establishing apprenticeship programs, who have spent many hours with the Joint Apprenticeship Committee to explain their responsibilities and duties, who have attempted to inculcate the value of "learning," of "knowing," with our own members, never cease to be amazed and somewhat frightened by the regular and intense criticism of apprenticeship programs. This degree of criticism has nearly become institutionalized, and many labor representatives adopt a posture of defense almost automatically when discussing the subject. There is a need to objectively appraise (a) the contribution that apprenticeship programs have actually made to our society, and (b) the opportunities that have been made available to individual workmen to fully develop their potential skills. Perhaps we in the labor movement—and, indeed, many employers—have failed to "set the record clear;" for we do believe that apprenticeship is an important and vital institution within our society. While space does not permit an exhaustive reply to all the criticisms of apprenticeship programs, I would like to answer some of the more frequently voiced barbs, and also to comment on certain misconceptions of apprenticeship that are widely held.

In an attempt to gain some perspective in evaluating apprenticeship programs, I think it important to emphasize, first, that apprenticeship programs today are a product or a result of collective bargaining. When we speak of collective bargaining in this country, we are discussing approximately 125,000 agreements in nearly all industries, involving not only the 129 individual unions affiliated with the AFL-CIO, but also the non-affiliated labor organizations.

Patterns of collective bargaining within the United States vary considerably, which affects the resultant settlement. At one end of the spectrum we have industry-wide bargaining, where a single agreement will cover hundreds of thousands of workers within an industry—down to the small automotive repair shop where there may be one of two mechanics covered by one agreement.

It is true that not all labor organizations have sought apprenticeship programs in their agreements. Some have not done so simply because they do not represent anyone in an apprenticeable trade; others because they are not interested or have not been successful in convincing the employer. Unlike our mandatory public school system, apprenticeship is a voluntary endeavor. It is the result of agreement between labor and management, and there are many factors which influence the decision to establish an apprenticeship program. There is no law compelling apprenticeship, and its success must depend upon the ***voluntary cooperation*** of labor, management, and those providing the related instruction. The tradition and policies of the union toward apprenticeship, the attitudes of the employer, the employment fluctuations within an industry, the corporation, the firm, the promotional efforts of the state and federal government, the supply of skilled manpower, the presence or absence of other institutional or on-the-job forms of training—all of these are variables which affect the question of whether or not a ***bona fide*** apprenticeship program is established.

As long as apprenticeship is a product of collective bargaining, it will be influenced by all the factors affecting "the collective bargaining situation." We cannot divorce one from the other—nor can we overlook the fact that this is not a society that is composed of employers who all think alike or unions that all think alike. It is a gross oversimplification to assume, for example, that the growth, development, and frequency of apprenticeship programs in the meat-packing industry is identical with those in the printing, building, steel, transportation, or metal fabrication industries, or ***vice versa***. By tradition and practice, different unions in different industries have different degrees of control over the labor market situation, and hence, have a different interest and concern with the problems of supplying and training manpower. Any industry which is dependent upon the union supplying the necessary manpower will cooperate with that union in establishing apprenticeship programs to a far greater degree than an industry which has not abdicated this responsibility and relies upon its own efforts in recruiting workers. The point I want to emphasize is that there are unique problems associated with each situation which definitely affect the attitudes of the parties at the bargaining table when this matter is discussed.

One can gain a knowledge of a trade without going through an apprenticeship program. In fact, more workers are becoming "journeymen" today through extensive and prolonged experience, ***ad hoc*** schooling,

etc., than those completing apprenticeship programs. It is not the most efficient or thorough way of securing the fundamentals of a trade, but it is done. Where workers are unorganized, and where employers refuse to negotiate apprenticeship programs, other "partial" forms of training do occur. However, we have yet to see evidence that these "other approaches" towards achieving the status of journeymen are superior to a *bona fide* apprenticeship program.

Throughout the years, the AFL-CIO has sought to encourage and enhance the development of apprenticeship programs as such, but has not attempted to speak for and in behalf of any individual affiliate. The federation has assumed, and rightfully so, that each affiliate would handle its own apprenticeship problems in light of the circumstances of the industry or locality involved. On the question of discrimination, the AFL-CIO, as a matter of principle, has sought to eliminate racial discrimination in apprenticeship programs wherever it exists. It should be borne in mind that the AFL-CIO, as such, does not have the authority to force any affiliate to change its policies unless they are in conflict with the AFL-CIO constitution. The most stringent penalty would be expulsion from the federation, and this would not necessarily insure the fact that the policy would be changed.

Insofar as racial discrimination is concerned, the federation has always voiced a strong policy against any form of discrimination. It is true that certain local unions of some of the affiliates have had discriminatory policies with regard to apprenticeship applicants, but much progress has been made in breaking these barriers. Discrimination practices in apprenticeship programs cannot be condoned at any time. Where it exists, it is wrong and should be eliminated at once. However, the fact that it does exist does not mean that apprenticeship as such is not a sound method of training. Many critics have assumed that discrimination and apprenticeship are synonymous, and therefore, in order to correct the situation, they have implied in their criticism that apprenticeship programs should be discontinued.

Today, in many cities across the land, pre-apprenticeship programs sponsored by organized labor are in operation to provide the individual with an opportunity to pass or qualify for entry into a program. There are those who have felt that the entrance requirements to various apprenticeship programs were too stringent and, accordingly, viewed this as "the mechanism of discrimination." Apprenticeship programs have always had entrance requirements, and because of changing technology in many crafts, such requirements will increase in the years ahead.

It is rather paradoxical to hear this type of criticism, since just about every college and university has entrance requirements, and very rarely do we hear criticism of this practice. When we do, it is usually because the requirements are too low.

Another criticism frequently voiced is the alleged restrictive characteristics of apprenticeship programs. In the main, this criticism is

directed to the normal requirement found in most programs that limit the number of apprentices within a particular shop. It is usually expressed in terms of "...no more than one apprentice for each 5-8-10 journeymen" (the number may vary). This restriction is incorporated into the apprenticeship program for two principal reasons. On the one hand, there is a deep concern on the part of the union for not training an oversupply of a particular craft within a particular locality, and secondly, there is the very obvious concern that a sufficient number of journeymen be available to impart the needed training without seriously interrupting the production within that particular shop or job site.

Enforced restriction in the face of need can never be rationally supported in a free society. Similarly, on the other hand, an enforced oversupply of a particular occupation—be it electricians, dentists, or plumbers—cannot be justified either. Obviously, the next question that is normally asked, assuming that one is perturbed with the shortage of a particular occupation, is: Who should tell a person what occupation he must select, and which employer or what institution *must* train him for this occupation?

Within a totalitarian society, there is never a problem as to who decides these questions. The dictator issues the order, and it is done. However, there is little evidence that the "societal engineers" have guessed right at all times. In fact, the evidence is to the contrary. A totalitarian regime is extremely rigid; it simply cannot and does not react to specific manpower shortages as rapidly as a free society can.

In a free society, there is a far greater degree of "effective responsibility" in seeing that an adequate number of people are trained within a particular occupation or profession without sacrificing individual freedom.

When viewing and evaluating the institution of apprenticeship within our society, we cannot divorce completely the attitudes and values of those who are directly involved with apprenticeship from the attitudes and values of our entire society. This is simply a statement of fact; it is true of nearly all institutions within our society.

In this particular instance, the overwhelming criticism is directed towards organized labor. There is an attempt to limit apprentices in almost every apprenticeship agreement—and we in labor are severely chastised for this. I have yet to read one single word of criticism of the employer who does not have an apprentice in training. While a particular program may be unduly restrictive (although I have yet to see an instance where this has been proven), there are thousands upon thousands of employers who for one reason or another have failed to accept their responsibility in initiating *bona fide* apprenticeship programs. Somehow these employers are not criticized, nor are those labor unions who fail to press for the establishment of apprenticeship programs criticized. Apprenticeship is not an end in itself—it is a means to an end. It is a mechanism for insuring the continual supply of skilled

workmen in an orderly and systematic manner and a means of permitting individuals to develop their full potential.

I do not view racial discrimination, nor the so-called restrictive characteristics of apprenticeship programs, to be the major problem. The simple fact of the matter and the major problems facing those concerned with apprenticeship is that too few employers have accepted the responsibility of joining with unions in establishing apprenticeship programs. As indicated previously, apprenticeship is a product of collective bargaining. One cannot force an apprenticeship program upon an employer, and, similarly, it is nearly impossible to conduct a successful strike on just this one issue. If an employer does not voluntarily agree to the establishment of a program, the chances are that none will be established.

While the Bureau of Apprenticeship and Training of the U. S. Department of Labor and the various state agencies have been chided for not being more successful in their promotional efforts, they are, in fact, the only interested "third party" group that has sought to encourage apprenticeship. The critics of apprenticeship have not offered a workable alternative which would fit within the collective bargaining framework. And, for the most part, they have failed to understand the institution and the interplay of forces that surround most apprenticeship programs.

I believe it fair to voice a hypothetical question as to whether we could have accomplished our high rate of productivity and our rapid rate of growth without the institution of apprenticeship within our society. Essentially, there is no other institution which embraces and enhances the concept of a "journeyman" craftsman. While it is true that vocational schools, the Armed Forces, correspondence schools, and short-term on-the-job training programs all exist and are operative in our society, very few of them use the journeyman concept as a goal of their instruction. For the most part, the goal of non-apprenticeship training is to impart limited information to prepare a person to do a particular job for which the employer needs manpower. On the other hand, there is inherent in the concept of "journeyman" the fact that one is being trained in a particular trade, or at least, to have a working knowledge of the fundamentals of all facets of a trade. The concept of journeyman is extremely important in a society whose technology is changing and advancing at a tremendous rate. A craftsman who is equipped with a broad base of fundamentals can more readily learn the specialties of new developments—and what is more important, relate these new developments to other innovations within a particular technology.

Within the professions, there are well established standards of what is expected of a doctor, a dentist, a chemical engineer, a nurse—we could name them all. We acknowledge that these standards are not static, that they change as new developments occur and as new demands are made. This is true of the journeyman craftsman also—be he a plumber in a gaseous diffusion plant or a toolmaker in the aerospace or

auto industry. Apprenticeship—as a voluntary arrangement between labor and management—represents the only systematic means of imparting these new developments, techniques, and knowledge of materials to those who are coming into and continuing in the trade.

The evidence is clear that we could not have developed the new technologies associated with atomic energy and electronics as rapidly as we did if we had not had a reservoir of well trained electricians, plumbers and pipefitters, machinists, aircraft electricians, and experimental model makers. While I do not want to give the impression that these technologies could not have developed without the institution of apprenticeship, the fact that we did have well rounded, versatile craftsmen, who were journeymen within their trade and who provided a "well founded base" from which we could build, made the task far less difficult.

Another indication of the value of apprenticeship to the employer and to society as a whole is the fact that a high percentage of the apprentice graduates are promoted to lower and middle echelons of supervision within a relatively short period of time after completing their program. To a certain degree, apprenticeship has become an "executive training program" in some shops, rather than a program for training craftsmen. Nonetheless, the point is clear that no other programs are apparently available to fill this need.

Apprenticeship is by no means a perfect system of imparting the knowledge and manipulative art of a craft to another person. Like any other system of learning, it must depend upon people—the people who are teaching, the people who are administering the program, and above all, the people who are learning. What motivates them in what they are attempting to accomplish may vary from time to time—and above all, they are influenced by the general values and attitudes found in the society. Further, it is a voluntary arrangement between labor and management; it is not a private or governmental bureaucracy established by law or financed by taxes. There is always a tendency to compare the effectiveness or success of apprenticeship with the more formal systems of education—and not necessarily comparing the end results.

For some, the informality of the institution is automatic grounds for being suspect. Academicians must have answers—any answer. To avoid "completing the questionnaire" because of lack of knowledge or because "there is no easy definite answer" is believed to be grounds for failure. For example, the neatness of a "vocational school curriculum" to develop a journeyman craftsman is far more appealing—intellectually—than a voluntary apprenticeship program. This belief is upheld, notwithstanding the fact that there are very few vocational schools that have money to purchase—and keep purchasing—new equipment as it is developed. Hence, certain misconceptions are perpetuated that have little basis in fact.

For others, because labor and management are the principals of apprenticeship programs, there are allusions of collusion. It is difficult

for many to understand that while labor and management are adversaries at the bargaining table, they are partners in production. The area of conflict between labor and management is always exaggerated—it is the strike that is always publicized, but not the peaceful settlement. Hence, when labor and management do agree on a joint program, there are some who conclude that this type of activity is not "benefiting their role in life"—something must be amiss. One need only to examine the many hours lost because of work stoppage, as compared to man-hours lost because of illness and injury, and note that the latter far exceeds the former.

We labor people realize the weaknesses in certain of our programs. The weaknesses do not emanate from the form or perimeter of apprenticeship as such, but from people who haven't accepted their full responsibility in seeing that it operates.

We are witnessing today a tremendous concern on the part of our government for manpower problems. This concern in many respects is long overdue; and we in labor realize that apprenticeship will remain under close scrutiny for years to come. We welcome the ideas, suggestions, and comments from interested observers—ideas which will strengthen the entire institution. However, it is extremely unlikely that organized labor will alter or drastically change the institution of apprenticeship in the absence of any positive suggestions.

THE PURSUIT OF EXCELLENCE IN APPRENTICESHIP TRAINING: RESEARCH PROCEDURES, INSTRUMENTS, AND CHALLENGES

ALFRED S. DREW and PAUL V. JOHNSON
PURDUE UNIVERSITY

In cooperation with the U.S. Department of Labor and the Federal Committee on Apprenticeship, Purdue University has embarked upon a national research project—a project that is being devoted to the pursuit of excellence in apprenticeship training in the United States.[1] An *orientation* to the research effort appears in another paper.[2] The current presentation emphasizes the research design, particularly procedures and instrumentation, problems encountered, and leads for additional research.

Attention is being focused on the development of procedures and guidelines for an optimum apprenticeship training system, including journeyman training. A simple paradigm of the research design appears in Figure 1. The pipe, machinist, printer, and chef-cook trades are serving as the vehicles for securing substantive inputs.

As suggested in the illustration, several basic lines of inquiry have guided the inputs. (1) What factors are basic to the development of outstanding tradesmen who adapt to technological and other changes? (2) What criteria do accrediting agencies, apprenticeship committees, and apprenticeship research advisory committee members consider essential to adequate education and training programs? (3) What critical elements are in operation in outstanding apprenticeship training systems? (4) What kinds of analyses and feedback systems must be identified and employed to keep tradesmen in a state of operational readiness?

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1. The complete research project title is "A Study of the Need for Educational and Training Adjustments in Apprenticeship Programs for Selected Craft Occupations," OMPER (formerly OMAT) Contract No. MDTA 81–13–33.

2. Alfred S. Drew, "The Pursuit of Excellence in Apprenticeship Training: An Orientation to the Research Effort," Lafayette, Indiana, Purdue University, mimeographed, 1966.

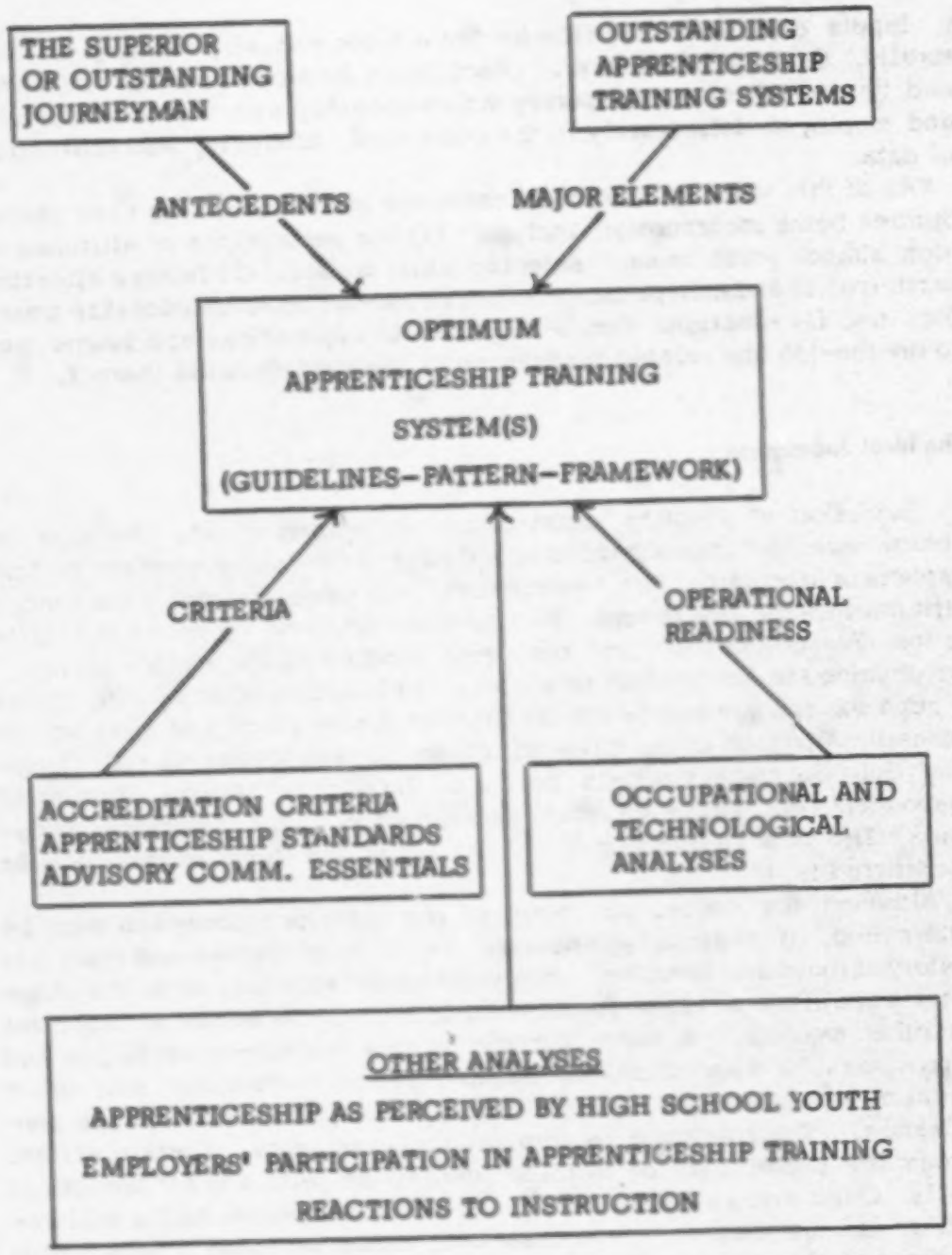

FIGURE 1.

Master Design:

Pipe-trades, Machinists, Printers, Chef-cooks.

Inputs depicted in the illustration are not mutually exclusive. Naturally, there is "spill-over." Vacillation between sources "internal" and "external" to contemporary apprenticeship systems is recognized and employed deliberately in the collection, analysis, and utilization of data.

As of this writing, the researchers are still augmenting their plans. Studies being incorporated include: (1) the perceptions or attitudes of high school youth toward selected skill trades; (2) factors affecting participation and non-participation of employers in apprenticeship training; and (3) reactions and/or attitudes of apprentices and journeymen to on-the-job and related instruction or the inadequacies thereof.

The Ideal Journeyman

The effort to identify "outstanding" or "superior" and "average" or "below-average" journeymen is an attempt to determine whether certain aspects of upbringing, life experiences, and trade-training experiences differentiate the two groups. Two instruments, one known as the "Criterion Questionnaire," and the other entitled "Life History Survey," are designed to accomplish this goal. The question of what constitutes a superior journeyman is fundamental to the research and must be examined. A portion of the Criterion Questionnaire known as the "Criterion Sub Questionnaire" is being utilized with several samples of respondents who will provide data on their image of the superior journeyman. The purpose and use of the ***Criterion Sub Questionnaire*** will be considered first.

Although the perceived image of the superior journeyman must be determined, if superior journeymen are to be identified and their life history antecedents examined, information on viewpoints as to the characteristics of the superior journeyman and his performance is important for other reasons. A basic purpose of this project—examination and improvement of apprenticeship training systems—demands that direct attention be given to the nature of the superior journeyman and his performance. The literature in this area is confusing. Certain writers stress the desirability of training journeymen with a great breadth of skills. Other writers argue that an emphasis on special skills will result in the training of journeymen best fitted for today's jobs. Still others see the training of journeymen important primarily as a source of future managerial personnel. While these perceptions of the characteristics of the superior journeyman are by no means mutually exclusive, the ideal apprenticeship training system can scarcely give equal attention to all of them. For example, unless the time of an apprentice program were unduly long, extensive training in human relations and managerial skills could only be provided at the sacrifice of some training in manual or other skills.

There appears to be little empirical evidence as to what, if any, consensus exists concerning the nature of the desired end-product of an apprenticeship training system—the superior journeyman. Better data than are presently available on the image of the superior journeyman as perceived by persons concerned with apprenticeship training, are needed. Therefore, mail surveys to determine this information for the trades under study are being conducted among selected national samples of employers of journeymen, educators who train persons to teach in and administer related training programs in apprenticeship systems, instructors of apprentices, personnel in governmental agencies who work with apprenticeship systems, union officials, journeymen, and apprentices.

In order to make operational the examination of the perception of the dimensions of the superior journeyman, some selection of characteristics was necessary. Based upon the literature and discussions with management and labor personnel, seven characteristics which might be perceived as typical of a superior journeyman were selected. These characteristics were then built into a form to be used for the ranking of perceived importance by various groups. Provision was also made on the form for write-in responses in cases where respondents felt that essential items were missing from those listed. The characteristics selected for use on this form were: (1) over-all skills, (2) ingenuity, (3) leadership, (4) special skills, (5) initiative, (6) teaching ability, and (7) high-quality work. The definition of each is shown on a sample form illustrated in Figure 2.

It should be noted that the above characteristics are described in terms sufficiently broad so as to be applicable to a variety of trades. This approach precludes the possibility of obtaining data (with this particular instrument) on the specific operational skills required for superior journeyman performance in a given trade. The latter is being done, for example, in the study of the tool and die trade which is being carried out under an OMPER contract with Northeastern University in the Boston area. Although the Purdue team is gathering data on occupational content through occupational and technological analyses of the specific trades being used as research vehicles, the examination of perceived images of the superior journeyman is being done in the manner described so as to make possible certain broad types of comparison. It is anticipated that some tentative answers will be supplied to the following questions during the course of the research:

(1) Which of the seven (or other suggested) characteristics are considered most typical of the superior journeyman by various groups concerned with apprenticeship training systems?

(2) Are there basic differences in the perceptions by the various groups concerned with apprenticeship training systems? For example, do employers or their representatives and union-officers have different perceptions of the superior journeyman in a given trade?

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Peoples' views on the importance of different abilities and characteristics of good journeymen differ. Rank the characteristics below from 1 (the one you consider most important) to 7 (the one you consider least important). Some of these abilities are used much more often than others. Do not rank on the basis of how often the characteristic is used but on how important it is that a journeyman have this ability to use when it is needed.

_____ Special Skills. Ability to perform a limited number of trade tasks rapidly and with high quality of workmanship. A journeyman with this characteristic usually does a relatively small number of different tasks quickly and well.

_____ High-quality Work. All work accurately and carefully completed. A journeyman exhibiting this characteristic produces such work that you could use any item he completes as an example of top-quality work.

_____ Leadership. Potential to become a group leader, foreman, or higher-level manager. A journeyman with this ability is worth training for supervisory work.

_____ Over-all Skill. Breadth of ability. A journeyman with such ability can handle any job in the trade even though unusual or complicated.

_____ Ingenuity. Ability to get job done even when conditions are tough. A journeyman with this characteristic can make-do with the tools, equipment, or materials available even though they are not the best for the job.

_____ Teaching Ability. Ability to train others. A journeyman with such ability makes a good instructor.

_____ Initiative. A self-starter. A journeyman with this characteristic goes efficiently from one job to another and requires a minimum amount of supervision.

II

Indicate below any other important kinds of job skills you feel a journeyman should have that were not mentioned above. If you find the above ranking very difficult, please explain the problem briefly after you do the ranking.

Thank you very much for your generous help. Please place this survey in the enclosed, self-addressed, stamped envelope, and mail to:

Purdue University
School of Technology
Apprenticeship Research
South Campus Courts
Lafayette, Indiana 47907

FIGURE 2

Machinist Trades Rating Form

(3) Do the perceptions differ within particular groups? For example, do small employers have a different image from that of large employers?

(4) Do particular groups disagree concerning the image of the superior journeyman in different trades? For example, do governmental personnel who work with apprenticeship training systems have a different image of the superior machinist and the superior pipe tradesman?

Separate cover sheets are being used with surveys of the various groups: and while the returns are anonymous, various types of background data for informational and classification purposes will be obtained from these cover sheets. Three different "scrambles" of the seven characteristics are being used to minimize the proximity effects on choice of traits.

The data will be examined in several ways. For example, an analysis of the variance resulting from the importance assigned to various criteria by these groups is planned, in order to determine whether different groups have different images of the ideal journeyman. Additional analyses of variance may be made where appropriate to examine relationships between the perceptions within particular groups and important dimensions of these groups. For example, the perceptions of respondents within employer samples may be examined in terms of differences related to size, nature, and geographical location of employing firms.

The *complete* Criterion Questionnaire is an instrument designed primarily to obtain nominations of "superior" and "below-average" journeymen from their peers and supervisors. The same characteristics which were used to describe the image of the superior journeyman are applied. Here, however, respondents are asked to pick persons "outstanding" and others "just average" for seven situations, each strongly "loaded" for the characteristic named. For example, situation one for which respondents are to nominate persons "outstanding" or "average" reads as follows:

> ***Over-all Skill.*** Handle any job even though it's unusual and complicated.

It was decided that on actual nomination forms classification of journeymen as "outstanding" and "average" would be more acceptable to respondents than the terms "superior" and "below-average." Journeymen frequently nominated in the two categories for the various characteristics on the form will be given the Life History Survey to complete.

The contents of the Life History Survey consist primarily of factual material. Ninety-five questions cover the following areas: (1) personal history, (2) family background and early life, (3) trade training and education, (4) work history, (5) finances, and (6) habits and attitudes.

Any items on the Life History Survey which statistically differentiate between superior and below-average journeymen can be used in one or more ways. The items may suggest certain characteristics to be sought in the selection of apprentices. Some items may suggest certain procedures which can be built into apprenticeship training and pre-job training programs. One possible result might be that certain persons not previously considered suitable applicants for apprenticeship training systems could be encouraged to pursue such training.

Each item on the Life History Survey will be analyzed to see whether any given alternatives differentiate between journeymen previously identified as superior and below-average on the Criterion Questionnaire. A chi square analysis will be performed to determine the statistical level of differentiation for items with discrete responses. For items along a continuum, it may be feasible to use a *t*-test to obtain the level of differentiation.

If there appears to be a need, testing for differentiation of the items on the Life History Survey will be performed for all seven of the criteria on the Criterion Questionnaire. If several of those criteria are consistently deemed more important than others by the various rating groups using the Criterion Questionnaire and the Criterion Sub Questionnaire, then only the top three or four criteria will be examined by analysis with the Life History Survey on each trade.

The Criterion Life History approach is being conducted initially as a pilot study in the machinist trades in a large metropolitan area. While the use of life history studies to obtain the antecedents of certain subsequent behavior or performance of individuals is by no means a new technique, the present attempt may be somewhat more ambitious than most previous work. Life history data are commonly used in studies involving a single organizational entity: thus very intensive efforts to obtain cooperation and completion of forms are possible. In the present work, the form will be administered to employees of a number of business firms selected insofar as possible, by a stratified random sampling technique. However, the problems of obtaining a reasonable return on an instrument requiring one to two hours for completion may be formidable.

If satisfactory numbers of returns on the pilot studies can be obtained, and if at least some of the Life History Survey items differentiate between superior and below-average journeymen, the process may be repeated in additional geographical areas and/or other trades.

Criteria, Standards, Essentials

The major initial goal in this portion of the apprenticeship study is the *tentative* compilation of educational and training criteria, in a checklist or guideline format, for use in appraising apprenticeship training systems.

Procedures include: (1) the identification of national, regional, and professional accrediting agencies, the receipt of their evaluative cri-

teria, and the analyses of such criteria to determine compatibility and frequency of use: (2) the identification, receipt, and similar analyses of apprenticeship training standards, on file with the Bureau of Apprenticeship and Training, U.S. Department of Labor; (3) the receipt and "pooling" of criteria for outstanding apprenticeship training programs and curricula, as perceived by labor-management members of Apprenticeship Research Advisory Committees to the Purdue staff; (4) an inspection regarding the extent of agreement, or harmony, among the three sets of criteria; and (5) the attempt to draw upon the three sources to construct a composite list of appropriate criteria or essential elements.

It should be recognized that the attempt to collect, classify, and compare criteria from regional and occupational education accrediting agencies, apprenticeable trades and crafts, and members of four distinct research advisory committees necessarily involves difficulties. An obstinate problem, for example, is a lack of agreement on terminology (definitions). The difficulty is obvious when one tries to classify topics and notes the synonymous use of such terms as program, curriculum, and course of study within a given text. Varying modes of presentation (essay types, topics, questions) of criteria and essentials also complicate any endeavors to equate criteria and essentials. Differing comprehensiveness (length, details) of treatment is also a disturbing factor. Nevertheless, substantial progress is being made on the development of a list of guidelines for apprenticeship training programs. Details will be reported at a later date.

At this time, the Purdue research team plans: (1) to continue, through its advisory committees, the development of a tentative checklist by revising and re-stating it in terms understood by, and acceptable to, apprenticeship personnel; (2) to modify the tentative outlines by inputs from the continuing study of outstanding training systems; (3) to continue the modification by means of inputs from the research on the pervasiveness and rate of technological and other changes, and work in the analyses of the trades; (4) to continue the modificaton with inputs from the studies on superior journeymen; (5) to consider further modifications on the basis of suggestions that may evolve from responses to survey instrument items on "weaknesses" and "strengths" of apprenticeship training, and from numerous unsolicited remarks and discourses communicated to the researchers; and (6) to continue searching for acceptable means for weighting items and validating the resultant checklist(s) which, hopefully, will serve as a framework for developing truly distinguished and recognized tradesmen.

Outstanding Training Systems

Nominations of outstanding apprenticeship training systems are being made individually by members of research advisory committees. The

coverage of the nominations should be national in scope, and selection of apprentices, training of apprentices, and training of journeymen are to be considered in the systems nominated.

Visits to and studies of the systems nominated are expected to contribute to the project in various ways. The tentative checklist, developed by study of accreditation criteria and standards will be useful in examining these systems. An operational test of the usefulness of the checklist will be made, and specific items (guidelines) thereon will be verified. Efforts will also be made to identify the other common features of the nominated systems—features which may not have been noted previously in any other manner—and to incorporate these features into the evolving checklist. Visitations to operational training programs will enhance opportunities for analyses of actual instructional methods and media which may contribute to the development of an optimum apprenticeship training system(s).

In the early stages of this project, the researchers attempted to obtain an adequate listing of the most outstanding programs, or systems, and criteria essential to the superiority of such systems. They did so by using the paired comparison technique in combination with a request for the identification and statement of bases of discrimination between paired systems. It was expected that a panel of experts, in each trade, would have sufficient knowledge of the training systems in its trade to compile an ample listing of commonly known systems in the United States. Neither ample national or even regional listings evolved during group meetings with the various panels. Fortunately, though, the researchers have recourse to nominations by individuals. On-site visits, therefore, will receive major attention in the fall of 1966.

Occupational Analyses

Any apprenticeship training system must be based upon elements which make up the trade. Study of a system dictates that such elements should be identified and examined for completeness, flexibility, recency, and applicability. This necessitates the use of a detailed occupational analysis not only to identify the skills, knowledge, and other elements required for successful performance in the trade, but also to differentiate the trade from others. Since a search of the available materials and relevant literature has revealed no sufficiently thorough analysis for any of the occupations under study, it is necessary that such analyses be developed. Perhaps the most complete source of available data is the Bureau of Employment Security's *Dictionary of Occupational Titles* (DOT). Various persons have commented on this source.[3] The descriptions of the occupations in the DOT are adequate

3. For example, see Edward J. Meade, "The Occupational Data Requirements for Education

for job evaluation, recruitment and placement, better utilization of workers, and the establishment of personnel specifications; however, they are not sufficiently detailed for use in the development of *training* content.

In addition to work-site observations, interviews, and study of the literature, a "Work Diary" is being used in this project. The Work Diary is composed of two basic data-gathering parts. The first is a background information form to provide data regarding mobility of journeymen and apprentices; the means of acquiring skills and knowledge about the trade; the type of industry in which employed; and licensing and/or certification requirements.

The second part of the Diary is a record of work performed. This provides information concerning activities or operations; frequency of involvement; time estimates; tools, equipment, materials, and supplies; and technical knowledge. This knowledge includes the making and interpretation of drawings, mathematical calculations, safety principles, trade science, and trade term Data from the Work Diary will be incorporated with data from the other sources and arranged in a suitable format for use in an analysis of the training content of apprenticeship programs.

A thorough and complete analysis for teachable content has numerous uses. Primarily, it provides the basis from which curriculum guides, courses of study, and instruction sheets are developed. In addition, the analysis provides a means through which some of the questions regarding apprenticeship training may be examined. (1) Do gaps exist between trade content and corresponding instructional materials? (2) To what extent do variances occur in training programs; are such variances attributable to local union jurisdictions, municipal and state codes, and/or licensing requirements? (3) To what degree are related technical instructions and schedules of work processes consistent with occupational content? (4) Is the ratio of time devoted to related instruction and on-the-job training appropriate? (5) Studies indicate that high school youth, in most instances, lack the knowledge necessary to realistically relate their abilities, interests, and aptitudes to occupations they expect to enter. Therefore, might a common core of skills and knowledge be appropriate? If so, the matching of trainee characteristics and job requirements could be enhanced.

Planning," in *Occupational Data Requirements for Educational Planning*, Georgianna B. March, ed. (Madison: University of Wisconsin Center for Studies in Vocational and Technical Education, 1966), p. 27.

Adjustments to Technological Change

A very desirable objective of any study of technological change is the development of an absolute scale of measurement to evaluate the effects of new products and the introduction of new tools or methods on educational programs. This is an ideal goal, however, and not a very realistic one. Nevertheless, attempts are being made to develop some techniques for evaluating changes and relating them to the course content of apprenticeship training systems.

Numerous sources of information are available for determining (1) probable trade areas in which the greatest amount of technological change can be expected, (2) the nature of expected changes, and (3) the time spans typically required (lead times) between the origins of concepts and needs for journeymen familiar with the concepts. In this project, sources of information include: (1) trade shows, (2) trade meetings, (3) trade journals, (4) manufacturers' associations, (5) apprenticeship training materials, (6) inquiries to journeymen, and (7) inquiries to manufacturers and other employers.

An instrument known as the "Manufacturers' Questionnaire" has been designed to gather information on: (1) anticipated changes in materials and processes; (2) the degree of acceptance of these changes as perceived by management personnel in innovating firms; and (3) avenues and agents currently used to disperse information on technological changes and associated operational requirements.

Impediments

Portions of the preceding discussion touched lightly upon some of the research difficulties encountered in the pursuit of an optimum apprenticeship training system. Perhaps a succinct discussion of other impediments—in an interdisciplinary research effort of this nature—may be of interest to the research community.

As expected, the problem of communications has been a formidable one in these respects: (1) diversity of contacts—not only because of organizational and administrative aspects within and among labor, management, government, academic, and other groups, but also with respect to the use of emotionally toned, "red flag" terms; (2) contact pressure, or time limitations, in properly briefing high-level officials on complex research operations; and (3) development of rapport with individuals and organizations who perceive the research effort as a potential threat to their special interests.

Difficulties inherent in establishing desirable contacts with, and obtaining cooperation from, affiliated—but autonomous—local unions and federated—but independent—small employer units should be recog-

nized. Recently, the research team also experienced a reluctance on the part of journeymen to rate their peers. Therefore, previously planned, but less desirable, alternate approaches may need to be employed. An example of benefits derived from advisory committees on the prudent use of limited resources is reflected in Figure 3, which displays selected areas of the United States with adequate potential for research in the trades involved in this project.

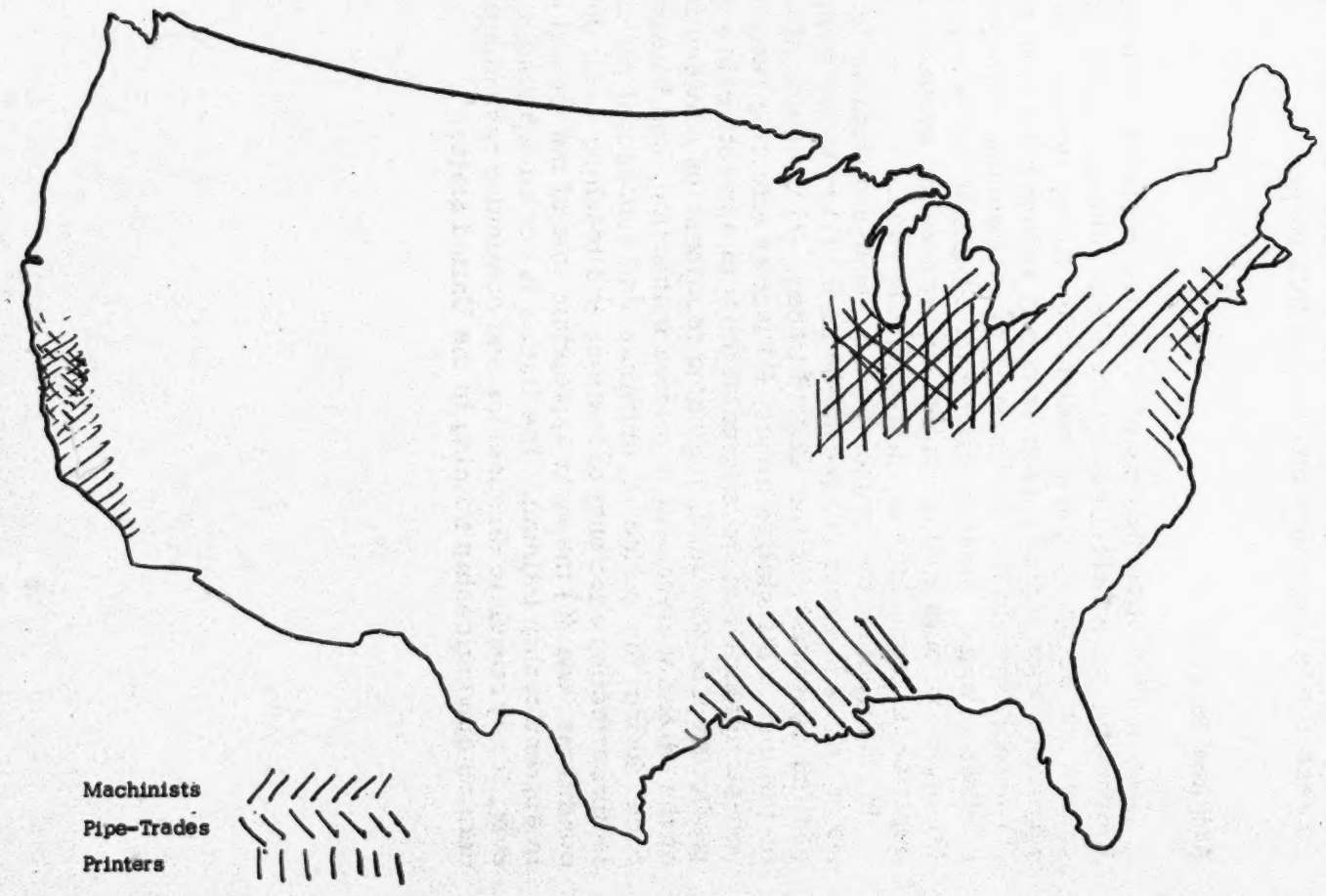
Additional Research

This presentation has focused on the research attempts at Purdue University, in cooperation with various other agencies, to develop a pattern for an optimum apprenticeship training system. Several pathways for major inputs into an evolving system have been emphasized: (1) antecedents in the development of outstanding journeymen; (2) accreditation and evaluative criteria for education and training programs; (3) review of outstanding apprenticeship training systems; and (4) occupational, technological, and other analyses.

In concluding the presentation, some suggestions for additional major research areas are presented here: (1) efficient manpower forecasting system(s) for the skilled trades; (2) financing of training and re-training in the skilled trades; (3) factors affecting participation and non-participation of governmental units in apprenticeship training; (4) prediction of performance, including relationships between performance on the job and achievement in related instruction, and between performance during the period of indenture and subsequent performance; (5) factors affecting efficiency of learning and teaching under defined trade conditions; and (6) the most appropriate role of the federal government in apprenticeship training. The listing is not an exhaustive one; however, it may stimulate discussions and continuing research efforts concerning apprenticeship training in the United States.

FIGURE 3.

Favorable Research Areas



DISCUSSION

FRANK G. MUSALA
STATE OF MINNESOTA INDUSTRIAL COMMISSION

I am pleased to have this opportunity to participate in this oldest form of education known as apprenticeship training for the skilled trades.

Dr. Charles Prosser—first director of Dunwoody Industrial Institute, Minneapolis, known as the dean of vocational education, and first chairman of the Minnesota Apprenticeship Council, drafted the Smith-Hughes Law together with Skipper Allen. They emphasized that the applicant should be fitted for the job; if not, JAC's would do him a favor to cancel him out and get into a trade or profession that he would be happy in and also his family.

Voluntary apprenticeship still exists, *but* many laws and directives have changed the nature of apprenticeship as we know it today, compared with 25 years ago or in the state of Wisconsin 50 years ago. Some of these laws dealt with the GI bills, minimum wages, Davis-Bacon regulations, selective service, and non-discrimination in apprenticeship.

Much good can come out of research of apprentice training if we keep our feet on the ground. There is no question that apprenticeship can be improved especially in the on-the-job site phase. As everyone knows, there has been reluctance on the part of journeymen and masters to impart knowledge to a green apprentice. However, I firmly believe that this trend is changing. The transfer of an apprentice from one employer to another, so that he may get the fundamentals and work under the supervision of different journeymen, will have a marked effect on the making of a journeyman or a superior journeyman.

This is a new slant on the outstanding journeyman or superior journeyman. So far, former apprentices have moved into supervisory positions or employer ranks. If this happens too often or too rapidly, who will do the work? We have heard about natural musicians and mechanics, so I doubt if the trades will be able to turn out all superior journeymen. In certain areas or in certain types of work this could be accepted, but not across the board. Never forget that the new journeyman learns many new skills after serving his time. Many times I have heard it said, and I have asked myself, "I wonder what I learned during my apprenticeship?"

I am aware that there is an effort being made at Purdue University to analyze the past practice of training machinists, pipe tradesmen, printers, and chefs and cooks. When the study is completed, the result will show, I feel certain, that the length of training time will remain constant. However, the training content in the classroom and on the job will continue to change as a result of technological change in the use of tools and materials.

The development of over-all skills is the ideal—especially in smaller shops where the employer hands the journeyman a blueprint and tells him to do the job, so he can forget it and concentrate on bidding the next job. A superior journeyman would not hesitate to complete the job or would not ask someone to do a job that he would not be willing to do himself.

As for outstanding training systems, I suspect this stems from the Patterson Award. This is most difficult to determine; either it is a case of someone's being timid and not having a chance to compete, or every committee thinks it has the best program. Trades or companies maintaining full-time apprenticeship directors have a lead on making outstanding training systems, and it spurs others to improve theirs.

The craft trades in particular have always depended upon the mobility of their journeymen to man projects—whether in their own back yard or any place on the globe. To train people for jobs that don't exist is a waste of time, money, and effort. Management and labor are best qualified to determine manpower needs.

With regard to related instruction, definite gaps exist in trade content and corresponding materials. The purpose of related instruction was to help the apprentice to do a better job the day following his classroom instruction. I realize this is a difficult goal to achieve, especially in mixed grades; it calls for a superior instructor and much individual tutoring. Variances do occur in training programs. These happen, not so much because of local union jurisdictions, but because of municipal or state codes and licensing requirements. I refer in particular to a recent court order that an electrician need not have a city license if he has a certificate of competency from the State Board of Electricity.

As for the ratio of related training to on-the-job training, the 144-hour requirement coincided with the 36-week school year and four hours per week of ordinary classroom preparation. This is changing, however, and many trades are requiring more today.

The last twelve years have seen many adjustments to technological change; some of this was due to apprentice contests. In the course given annually at Purdue University, instructors learn about the proper installation of new materials and pass this information on to apprentices. National apprenticeship coordinators do an excellent job of keeping joint apprenticeship committees informed of new changes, through contacts they have with manufacturers and editors of trade journals.

The financing of apprentice training on a local level started out in a small way—mainly buying stationery, postage, and stenographic service to publish the minutes of meetings, or giving an occasional completion banquet. Today we have many full-time and part-time directors in manufacturing plants or on an area basis, such as in the building and construction trades. This is possible because industry provides training funds through negotiated contracts on the local level, and in some cases on a national level.

The role of the federal and state governments was originally to promote apprentice training systems, to protect the welfare of apprentices, to relate supply to employment demands, and to exchange information on apprenticeship between the states. As in my case, there have been many changes since 1937 or 1939, i.e., minimum wage, the Public Contracts Act, Davis Bacon provisions, GI bills, selective service regulations, Title 29, Part 30, and the proposed incentives to train apprentices. The apprenticeship agencies have now taken on a service and enforcement function, instead of strictly a promotional one.

The above is a down-to-earth description of my experience as an apprentice, journeyman, instructor, estimator, and director of apprenticeship, and my dealings with management and labor over a period of many years.

Section II

Frederic Meyers, Chairman

RELATED INSTRUCTION: BASIC PROBLEMS AND ISSUES *

GEORGE STRAUSS
UNIVERSITY OF CALIFORNIA, BERKELEY

This report will deal with one aspect of apprenticeship only, "related instruction," as it occurs in the construction, printing, and machinists trades—where the vast majority of apprenticeship is undertaken.

I

GENERAL BACKGROUND

Extent of Participation

It is standard policy that all apprenticeship programs *should* include a minimum of 144 hours of related instruction per year (though California law now permits some flexibility). Some trades call for even more. Thus, the steamfitters now require 216 hours a year, and the carpenters recommend 160.

Most trades engage in related instruction, though the picture is rather spotty. Thus, in 1961, of approximately 156,000 apprentices in registered programs, about 71 percent were enrolled in related instruction. Of the two largest states, California had an enrollment rate of 89 percent and New York 61 percent.

The enrollment rate seems to vary greatly from trade to trade—from almost universal membership among the electricians to 30 percent among the masons and (according to one government report) only 10 percent among the carpenter JAC's. Related classes as such are not common in the printing trades. The International Typographical Union, for example, expects its members to take a correspondence course prepared and graded by the International.

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*This report is based on a larger study of apprenticeship, which is in turn a part of a still larger study of Employment and the American Economy sponsored by the Ford Foundation and directed by the Institute of Industrial Relations, University of California, Berkeley. In the course of our research we have tried to cover the works: we have interviewed BAT and state apprenticeship consultants, personnel directors, business agents, employers, employers' association directors, as well as vocational education and apprenticeship fund coordinators. We have observed JAC's and apprenticeship classes, have followed consultants on the job as they talked to employers and unionists, and have interviewed something like 150 different apprentices. For most of the 3½ years this study has been in progress, our emphasis has been on California; but I have spent a good part of the last year in New York State and I've tried to get a picture of apprenticeship there and also in Ontario.

Even within a given trade there were substantial variations from state to state. Thus, among the bricklayers, the percentage of Joint Apprenticeship Committees (JAC) requiring instruction ranged from 83 in Idaho to a low of 7 in Tennessee.

Time of Class

Most classes are held in the evening, though a few are held on Saturdays or on weekdays. In colder areas, it is not uncommon to hold full-time classes for a month or so during the winter. In Buffalo, New York, such full-time winter classes are held for the bricklayers, tile layers, cement masons, and iron workers. Apprentices in the major trades in Ontario now go to school full time for ten weeks at the beginning of their apprenticeship and for another ten weeks near the end. Ontario's training program is relatively concentrated because training is offered only at Provincial Institutes of Trade in major cities. Apprentices from outlying areas are expected to move temporarily to these cities while taking their training.

Small Communities

In the U.S., substantial difficulties arise in providing related instruction in smaller communities and rural areas. Since it is financially prohibitive to let class size fall below 10 or 20, only in larger communities is it possible to have separate classes for first-year men, second-year men, and so forth. In medium-sized communities, and among the smaller trades generally, it is common to lump all the apprentices in a given trade into a single class, regardless of their stage of development. In still smaller communities it may be necessary to throw several trades together, and so a class may include a first-year electrician, a fourth-year plumber, and so forth. Finally, related training is possible in rural areas only through correspondence courses.

Class Location

In most cases related instruction is given at local high schools, often in vocational classrooms. This pattern is changing somewhat. In California and Oregon a large and increasing proportion of classes is given in the junior colleges. To a lesser extent, junior colleges in other states are following the same pattern. A number of trades have begun to run their own programs, particularly the plumbers and steamfitters. In New York City, some of these programs are provided by private trade schools. Many trades with training funds have undertaken to procure their own facilities and to hire their own instructors.

Pay for Class

Most apprentices go to school on their own time, without pay. Wisconsin, however, requires all apprentices to be paid while at school, and this practice is followed in a few other situations. Usually apprentices are paid their regular hourly pay, if at all. But in Buffalo, apprentice bricklayers receive about $50 a week while attending school full-time, while the Ontario Provincial government provides an allowance of from $20 to $40 a week,[1] depending upon whether the apprentice is married or single, and whether he attends school away from or at home.

STUDENTS

The apprentices we interviewed were less happy about their related instruction than about other aspects of their apprenticeship. Of course, there were exceptions; but the typical apprentice attended class much against his will. He felt his classwork was impractical, irrelevant, boring, and a waste of time. He was especially antagonistic toward having to study math. Very often, too, he had specific complaints about instructional methods. Naturally his feelings were intensified by the fact that in most cases he had to attend school after work (when he was tired) and without pay.

All students gripe, of course, so perhaps this isn't too serious. Yet if we look at the personalities and backgrounds of apprentices, we should not be surprised to find them hard to motivate in a classroom situation. The typical apprentice is fairly bright. This is particularly so in the more desirable mechanical trades where competition is tough. Though tests suggest that many apprentices have the intellectual aptitude to do very well in college, most of them decided not to continue their schooling past high school.

Our interviews suggest that for many apprentices school was a frustrating experience. The typical apprentice just cannot seem to settle down to do book work. As one put it, "I would much rather work with my hands than my head." He has little desire to return to a classroom situation, and he strongly resists anything put in theoretical terms.

This feeling is compounded by the fact that most apprentices have little sense of *vocation*. Most have drifted around from job to job, finally ending up in apprenticeship, with little enthusiasm for their adopted trade (at least at first—enthusiasm often comes later). This lack of vocation seems to be true even if the apprentice's father is in the same trade. Again with notable exceptions, apprentices feel little intellectual challenge in their work; they have little desire to learn more than is absolutely essential to do their present job.

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1. Partially reimbursed by the federal government.

Understandably, this makes apprentices especially difficult to teach, though an exceptional instructor can arouse a great deal of interest from his students.

INSTRUCTORS

Good instructors are necessary for the success of a related instruction program, particularly since the teaching situation is inherently so difficult.

The good instructor in apprenticeship—as perhaps in all forms of teaching—does more than merely impart knowledge. He acts as a "role model," demonstrating through his attitude and behavior what a "good tradesman" is like. And he also serves as a father-confessor to his students, listening to their problems both off and on the job and providing them with advice and information. Though apprentices can bring their grievances to the business agent or JAC, the classroom instructor, being more available, is usually the man to hear them first. Indeed, the classroom is the only place where apprentices can meet with their fellows and talk about their problems in a sympathetic environment. It is the only situation in which they are not second-class citizens.

In any case, to fulfill his roles as advisor and father-confessor, the instructor must be trusted and respected by his students. While it is not essential that he be a craftsman himself, he must have a mature and sympathetic personality and should have a considerable knowledge of the trade.

Most apprentice instructors are either day school vocational instructors who are teaching night classes for extra compensation or craftsmen, journeymen, foremen, or even employers who teach in addition to their regular jobs. Almost all have a trade background. Some states demand such a background; in most cases JAC's insist on it.

Good instructors are hard to find, especially in trades like ironworking and roofing. Relatively few craftsmen have the temperament, interest, and ability to teach. In addition, the compensation—normally set at the standard school rate of $5 to $10 an hour—is not enough to provide a strong inducement for a craftsman who earns at least the lower figure on his regular job; especially since there is rarely any compensation for preparation or travel time.

The instructors we observed varied greatly in their effectiveness. Their strong points were usually enthusiasm and knowledge; their weak points ability to teach and sometimes ability to maintain discipline. In general they needed a good deal of guidance, particularly in a difficult-to-teach area such as mathematics. Such guidance is provided by many school districts and also by certain unions, notably the Plumbers and Steamfitters. But guidance is sometimes perfunctory,

consisting merely of admonitions to file lesson plans in advance and to fill out attendance sheets properly. More and better guidance is badly needed.

A problem arises with regard to the selection of instructors. The school district has the formal right to appoint the instructors who teach its courses; the role of the JAC in theory is purely advisory. Since competent instructors or even craftsmen willing to teach are rare, school officials are often dependent upon the JAC to find available candidates and the JAC is normally very helpful. Yet the recruitment of good instructors is made more difficult when, as often happens, JAC's also insist upon the right to veto or even to select the appointees. School officials report occasions when JAC's have insisted upon the appointment of individuals who are clearly incompetent when there were better men available—or have even insisted that good men be replaced by less qualified allies of the business agents. I don't want to exaggerate this—most school-union relations are harmonious. Still, almost every school administrator interviewed reported at least one case of friction which ended up in a showdown, with either an instructor being replaced (at the insistence of one side or another) or a course being dropped. Nor is the picture entirely one-sided! JAC's complain sometimes of hack instructors forced on them by school officials.

THE INSTRUCTIONAL SETTING

Ideally, related instruction would be much like other forms of schooling: students would start classes only at the beginning of the semester, each class would consist only of students at the same stage of development, and all the students in any one class would be studying the same subject at the same time. (Hopefully, too, the subjects studied at school, at any given time, would be closely related to the kind of work done on the job.) In practice, apprentice classes deviate a great deal from this ideal.

Since the smaller trades have only a few apprentices is any one community, the tendency is to group all apprentices for a given trade in a single "heterogeneous" class, regardless of whether they are in their first weeks of training or almost ready to graduate. "Graded" classes—that is, one class for first-year men, a second for second-year men, and so forth—exist only in the major trades in large cities. Even in graded classes, men are usually admitted to apprenticeship continuously throughout the year, and new students are constantly entering the first-year classes. As a result, the students in any given class are at different stages of progression in their studies, and few study the same subjects at the same time.

To complicate matters further, students come from different backgrounds; those who have attended junior colleges may be in the same

class as tenth-grade dropouts, though tighter selection techniques are making this a less serious problem, at least in the better trades.

All this makes coordinated instruction quite difficult. To the extent that instructors are untrained, students undermotivated, and classes disorganized, instructional techniques become quite crucial.

INSTRUCTIONAL TECHNIQUES

What sorts of instructional techniques are used? In California the most usual practice is to have each student work at his own pace in a workbook (or "state course"). A workbook consists of material to be read, problems to be solved, and short tests to be taken; in addition, the workbook often lists assignments to other books which should be available in the class library. The workbook is something like a correspondence course, and the use of workbooks often turns the class into something like a one-room schoolhouse or a supervised study hall, with each student or group of students studying by themselves. Not surprisingly, some students see such study halls as pointless. "I can read this stuff a lot better at home where it is quiet," complained an apprentice who was making rapid progress; "And I would save over two hours of travel each week." The primary function of the instructor, under these circumstances, is to provide individualized instruction as needed.

The widespread use of workbooks is understandable, since they make it possible to use inexperienced teachers. Also, workbooks tend to overcome the problem of heterogeneous classes by permitting each student to work at his own pace and to be at a different point in his study. On the other hand, the workbook method requires apprentices to study alone and to learn from books—study methods which would seem particularly inappropriate for students who are often undermotivated, physically exhausted, and resentful of anything smacking of book learning.

There are also problems in keeping workbooks current with recent technological change and in getting good workbooks written in the first place. After all, qualified writers who know the trade and also have the pedagogical background to write good texts are quite rare. Nevertheless, the workbooks I've looked at seem generally good (though I am hardly an expert judge).

Fortunately, few instructors rely entirely on workbooks. Many spend part of their time presenting lectures or demonstrations which are of general interest to the class, bringing in outside speakers or movies, conducting class discussions of actual work experiences, or providing manipulative training (to be discussed later). But these so-called "up-front" teacher presentations are far more meaningful when the class is homogeneous (when all students are at the same stage of development), than when the class is heterogeneous.

There are signs that instructional techniques may be improving. Efforts are being made to upgrade the level of teaching to reflect the facts that a large percentage of apprentices are high school graduates, and that somewhat tighter selection procedures tend to produce a better qualified student (albeit often one with low scholastic interest). Texts developed on a national basis by the various trades are rapidly becoming available, and these provide the alert instructor with additional material from which to choose. Training institutes, such as those run by the plumbers in Purdue, are also having an impact.

UNIONS AND JAC'S

Without the support of labor and management, related instruction—indeed, all apprenticeship—would be impossible. The apprenticeship program is a voluntary program, and JAC members spend hours and hours of devoted and often unpaid service trying to make related instruction successful. School-JAC relations are usually quite harmonious, but differences of opinion sometimes arise. I have already mentioned the controversies that may arise over the selection of instructors. But there are other points of friction. Unions, as we know, seek to control entry into their trades; and historically, unions have looked upon vocational schools, over which they have little control, as potential competitors to the older forms of apprenticeship over which they have a great deal of control. There is concern that once the schools start teaching the trades, they will want some say as to who enters apprenticeship—or even worse, start training people who will work on a non-union basis. For these reasons, unions tend to be suspicious of pre-apprenticeship and journeyman training (unless they can exercise tight control over it), and also shy away from Manpower Development and Training Act (MDTA) training for the skilled trades.

Jurisdictional disputes and suspicions between trades sometimes complicate school-JAC relations. Only rarely does one trade object to what another trade is being taught, but school authorities find it hard to induce trades to share classes, instructors, classrooms, or equipment. Thus there are expensive duplications. For instance, one trade may have expensive equipment which it uses only three hours a week, while another trade is denied access to it.

II

I have said that all that time permits about the problems encountered by related instruction. And I have deliberately accentuated the negative. I wish some clear-cut solutions were available, but for the most part all I can present are dilemmas or issues. Let's look at some of those issues.

ON-THE-JOB vs. RELATED TRAINING

The first and perhaps most basic issue concerns the relative merits of on-the-job as against in-school training. Of course, apprenticeship originally took place entirely on the job. Not until the 1920's did related training become widely accepted; even today there are those who dispute its merits. On the other hand, there are those who feel that on-the-job training is outmoded, and that training for the skilled trades should take place entirely in the vocational schools.

Those who believe that vocational schools should do the entire job argue as follows:

(1) Since the firms that hire apprentices are becoming increasingly specialized, on-the-job training inevitably is also becoming specialized, despite JAC efforts to police it. Thus, only a minority of apprentices today receive a well rounded education.

(2) Presumably apprenticeship is a much better organized form of training than merely picking up the job in a haphazard way. Yet the sad fact is that much apprenticeship is itself little more than picking up the job, with systematic guidance or training by foremen or journeymen being the exception rather than the rule. Though many trades require apprentices to keep books listing their experience and require foremen to countersign these, it is not uncommon for both parties to lie. Though many apprentices in fact receive an exposure to a fairly broad range of experiences, this is often as much a matter of dumb luck—being laid off by one employer and being hired by an employer doing a very different kind of work—than it is of planning or direction. (There are noticeable exceptions to this, of course, such as the Oakland, California, electricians and sheetmetal workers who require their apprentices to switch employers every six months.)

(3) Learning in school may be faster and more effective than learning on-the-job—for no other reason than learning in school is full-time, while learning on-the-job is largely secondary to the employer's insistence that the apprentice put in a full day's work.

(4) On the job one can frequently learn sloppy ways of doing things. Only the school has the time to teach the right way. (But opponents of vocational training may agree that the instructor may not know the right way himself.)

(5) Many of the old skills which required high degrees of manual dexterity and knack—such as stained glass setting—are becoming obsolete; while newer skills, such as electronics, are increasingly intellectual and therefore better learned in school. A hundred years ago, clerical work, accounting, and even law and medicine were learned largely on an apprenticeship basis. Today these occupations are learned in schools and universities. And so there is every reason to expect the same development to occur among the few occupations still considered apprenticeable.

So much for the arguments for vocational training. I am sure you are well aware of the arguments for on-the-job training, one of the strongest arguments being the various limitations of school training which I mentioned earlier. In addition, the following points can be made. (1) On-the-job training is cheaper than school training since men earn while they learn, relieving the taxpayer of a substantial burden; (2) Learning on the job is more realistic than learning in class. Trainees are more motivated when they do a real job than when they do a classroom exercise—and this is particularly true since many apprentices are bright kids who happen not to like school; (3) Classroom training tends to become antiquated and artificial; it is just too expensive for schools to buy new equipment as it comes out; (4) Finally, traditional on-the-job training has worked pretty well—with graduates of such programs holding good jobs and enjoying high pay.

So run the opposing arguments. Fortunately, it is not a matter of "either/or." We can have training both on the job and in school. The real question is the relative proportion of the two. But as a matter for debate let me list two propositions. First, it is foolish to expect each and every trade to have exactly 144 hours of related instruction annually. Some may need far less—the cement masons and metal polishers, for example. Others need more—certainly the electricians and the steamfitters. Second, as mentioned before, other occupations such as doctors and lawyers have moved away from on-the-job training to learning in school. On balance, I would expect the skilled trades to follow this same pattern, with a greater proportion of apprentice learning occurring in school and a lesser proportion at work. Despite all the many disadvantages of schoolroom instruction I have just mentioned, I think this greater emphasis on schooling represents a healthy trend. If we are going to insist that apprentices receive a thorough, well rounded training, then perhaps we should be prepared to let the schools play a larger role in the training process.

PRE-APPRENTICESHIP TRAINING

A few trades, such as Oakland Plumbers and Sheetmetal Workers, now require all apprentices to go through a period of full-time schooling prior to work. A boy who has had six months or a year of good pre-apprentice training—incidentally, one which includes a certain amount of manipulative as well as theoretical training—should be worth considerably more to an employer than one who is a completely green hand. Thus, pre-apprenticeship should result in a larger number of apprentices being hired.

Since classes take place in the daytime, students should be more alert than they are in after-hours classes, and so, more likely to devote full attention to learning. In addition, pre-apprenticeship classes are more likely to be homogeneous, and less emphasis need be given to

regular after-hours related instruction. Pre-apprenticeship makes apprenticeship something like medical training, in which the doctor first goes to medical school and then receives practical experience as an intern or a resident.

Of course there are arguments against pre-apprenticeship. Some of these are the same arguments used against schooling generally, i.e., the apprentice won't learn much, and what he will learn may be so impractical as to be almost useless. In addition, pre-apprenticeship forces the apprentice to serve a period of time without pay; this is a hardship especially for married men—one which may reduce the number of well qualified applicants. There is also a strong fear that those who go through pre-apprenticeship will go to work for non-union firms. And probably the most serious objection (though one not often mentioned) is that, with pre-apprenticeship, the decision as to who will enter the trade will be made by the education authorities, rather than by unions and management.

Despite these objections I think pre-apprenticeship should be encouraged, particularly if we are going to increase the amount of related instruction generally. Perhaps trainees can be subsidized by the government, as occurs in Canada and through the American MDTA. The question of selection is at least partly resolvable by inviting JAC's to act as advisors in examining applicants for training.

Manipulative Training

In principle, the apprentice learns *how* to do his work on the job, while in his related training he learns the *why* or theory. There is a strong feeling in some circles that the schools should not engage in skill-practice or manipulative training. For example, one school official insisted that welders and metal polishers should receive a thorough training in metallurgy, though he admitted that good texts and instructors were not available. At least three arguments are made against manipulative training.

(1) Some union officials feel that when the schools start providing manipulative training, they will be in a position to by-pass the apprenticeship system altogether, and that the schools will prepare people to work as scabs.

(2) Some believe that modern technology is so complicated that 144 hours a year provides far too little time to study the underlying theory and that none of this valuable time should be diverted to mere hand work. As one old-timer put it, "The boys have enough to do in school getting the basic background. They can learn how to do their work much better on the job."

(3) Finally, it is argued that manipulative training is more expensive than straight lecture and self-study teaching; it requires supplies, equipment and a good deal of space. Where school budgets are tight,

naturally school administrators may be unenthusiastic about buying expensive equipment.

Nevertheless, there is a real need for manipulative training, particularly where the apprentice does not have an opportunity to rotate from job to job. Presumably, once an apprentice completes his term of training he is qualified to perform all aspects of his trade. Yet since some specialized aspects may be practiced by only a few firms, unless a man rotates he will never get a well rounded experience. For this reason, a steamfitters' instructor gave his students actual classroom experience in calibration, since this sort of work was handled by only a few firms in the community.

Manipulative training would also seem justified where the skill is practiced on the job, but only in a slipshod manner. In class it is possible to go over the procedure slowly, explaining the "whys" as well as the "hows" and giving students experience in doing things the "right" way. (Though one may argue that the "right" way is "impractical" in terms of what can be done on the job, it seems reasonable for apprenticeship to perform the function of setting high standards.)

In some cases, practice in the safe environment of the classroom is required before the apprentice can ever begin to perform any aspect of a trade on the job. ("If you learn something in class," said a sheetmetal apprentice, "the boss may let you do it on the job. He can't afford to let you spoil expensive metal if you've had no experience.") Thus barbers learn to cut hair in barber school before they inflict themselves upon the unwitting public. Welding is almost impossible to learn from a textbook. Yet a welder must have a fairly high degree of proficiency before he can be used in this capacity on the job at all. Consequently, the apprentice should start to learn on scrap.

Some trades just have very little theoretical content. For the most part they involve hand skills. Examples of these are metal polishing, cement masonry, and to a lesser extent plastering. In trades such as these, which incidentally seem to attract some of the less school-oriented apprentices, it would be foolish to require three or four years of book-oriented training. Students in these classes should spend most of their time doing practice work under supervision.

On the whole, morale seemed somewhat higher in classes which permitted manipulative training. Skillful instructors can develop imaginative projects which enlist class enthusiasm. Thus a sheetmetal instructor required his class each year to build a space heater for his otherwise unheated class before the winter damp set in. In laying out plans for this heater, the class gained practice in geometry, among other skills.

We gave questionnaires both to the sheetmetal apprentices trained in this way and to a matched group of carpenters taught in the traditional workbook fashion. There were about 90 in each group. The carpenters reported overwhelmingly that they got more out of on-the-job

training than they did from their schooling—and in this they were like most other groups of apprentices. But the sheetmetal apprentices were almost unique in preferring the classroom situation, partly, I think, as a result of the manipulative training they received, and partly the fact that on the job they were often treated like chore boys and did little productive work.

IMPROVING INSTRUCTION GENERALLY

Now let us look at the broader questions of how we can make related instruction more effective.

Some trades feel that an apprentice should start class work just as soon as he is indentured. Otherwise he won't get into the habit of attending class regularly. This is a valid point, but it leads to heterogeneous classes and confusion. However, those schools which insist that apprentices enter classes only at the beginning of the year or at the beginning of a term are usually able to offer better instruction.

When a trade is so small in a given community as to make homogeneous classes difficult, then it may be wise to place greater emphasis on pre-apprenticeship, or to follow the Ontario system of sending apprentices for a full-time intensive training at a central location away from their home.

Within the schools more can be done to break down artificial lines between trades. Classes in mathematics, welding, safety procedures, or estimating might be taught to several groups of students at once, providing that the students are at the same stage of training. Such a plan will make it possible for a single class of apprentices to study the same thing at the same time. Indeed, common courses can be arranged for groups of trades with related technologies. One such group might consist of the trowel trades, another of the mechanical trades, and a third perhaps of the automotive machinists and the operating engineers.[2]

In upstate New York, some trades have relaxed the common rule that all instructors must be craftsmen. They have used graduate construction engineers as instructors in some subjects—and often with excellent results, since these men have had practical experience, while their engineering training helps them present material in a clear, logical fashion.

More can be done to motivate students. The better programs crack down on absenteeism and lay men off the job if they don't attend school regularly. But even in these programs there is little motivation for students to get more than a passing grade in class or to work at more than a bare minimum pace. Some bright students can complete four years of

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2. It might be possible, for example, for the mechanical trades to spend one-third of their time in common classes and two-thirds in specialized classes for their own particular trade.

workbooks in two or three; but they have little incentive to do so, since in most trades the only reward for working fast is to be given more work to do. It would seem reasonable that apprentices who do unusually well in school should receive some reduction in the length of their apprenticeship (and this actually occurs in some trades). At the very least, once an apprentice demonstrates mastery of all the material he is expected to know, he should be excused from further schoolwork. Of course, these bright apprentices may wish to take advanced courses, but this should be entirely voluntary.

Related to this, in many trades apprentices become journeymen automatically as soon as they complete their required term of years, the only requirement, if any, being that they pass fairly rudimentary school tests. I think the practice followed in many European countries should be adopted more often in a few trades in this country: before being admitted as a journeyman, an apprentice should be required to pass a comprehensive written *and* practical test—perhaps one taking several days—and the appropriate testing agency would seem to be the international union, *perhaps along with the national employers association.* Generally speaking, related instruction and apprenticeship will be more meaningful if apprentices realize that they must demonstrate a certain standard of competence before being admitted to journeyman status. The prospect of a stiff but realistic exam may itself motivate apprentices to take school more seriously. And it will also help guarantee that graduate apprentices will be competent in all fields of the trade.

Finally, a great deal more research is needed to develop curriculum materials and teaching methods which will seem realistic and meaningful to students who seem particularly unamenable to traditional classroom methods.

To conclude, related instruction is an important part of apprenticeship, and it is likely to become more important. While the problems which related instruction faces are many, and much instruction is in fact rather mediocre, the situation is actually rather hopeful. If we can bring the average up to the standard now existing among the best courses, we will have accomplished a great deal. With the great ferment going on within vocational education generally, and with vastly greater attention being given to this once "stepchild" of the education system, there is reason to believe that recent progress in vocational education will continue.

DISCUSSION

MORRIS A. HOROWITZ
NORTHEASTERN UNIVERSITY

Professor Strauss' paper on related instruction summarizes some of his findings from a rather large and important research project underway. I cannot take issue with his findings, and in general I would agree with most of his conclusions and comments.

One can question why the apprenticeship programs for the vast majority of trades require 144 hours of related instruction. And, if one can question the uniformity, one can also, therefore, question the necessity of the amount of related instruction. Some trades may find a large amount of related instruction very profitable to the apprentice, but I feel certain that the journeyman skills of some trades could be readily acquired with significantly fewer hours.

Making related instruction more effective is clearly a worthwhile objective. If qualified apprentices are to be exposed to classroom study, they should be given a program that is not only interesting and taught well, but also one that is directly related to their trade. However, the problems of obtaining good teachers are many; and apprenticeship programs face the same kinds of difficulties that other school systems have in employing qualified people at salaries that are obviously not sufficient.

Perhaps, as Professor Strauss states, greater emphasis should be placed on broader classroom education than on narrow on-the-job practical training. The trend is clearly to broaden the ability of the skilled craftsman. With rapidly changing technology, industry is more likely to need skilled workers who are versatile and who can readily be retrained for new-found jobs.

Since the principal focus of this conference is on research in apprenticeship training, I think it might be of some value to make reference to a number of areas where further research would, in my judgment, make a contribution to the area of training skilled workers. I have recently visited a number of Latin American countries where I was exposed to many of the problems of educating and training skilled workers. While I made no scientific study of apprenticeship programs in these countries, I would hazard a guess that a much larger percentage of

skilled workers acquire their skill through vocational schools than in the United States. In certain trades, skills are handed down from father to son and acquired in an informal way, frequently on the job. In other trades, the way of acquiring skill is through a formal educational program in which the young man becomes a full-fledged journeyman (by Latin American standards) by the time he is 18 or 19 years of age. Relatively few journeymen acquire their skill through a formal apprenticeship program.

I realize the difficulties in making international comparisons. We are uncertain whether (a) the craftsman's job in Latin America is really the same as the occupation of the skilled craftsman in the United States; (b) the skilled craftsman in Latin America has the same job mobility as that of an American craftsman; (c) the Latin American skilled journeyman could handle modern technical machinery as effectively as his American counterpart. These questions point out the need for considerably more research in the areas of training on an international basis. Some effort should be made to find out what kinds of training are being used in different parts of the world, and what parts of these training methods can be used effectively and efficiently in the United States.

I must make an additional comment about the research project I am currently directing at Northeastern University under a grant from OMAT, entitled, "Evaluation of the Training of Tool and Die Makers." The first objective of the study is to develop a methodology whereby one can determine the most valuable combination of education and training for a specific occupation. The second objective is to use this methodology to determine and evaluate the various combinations of education, training, and experience of the individuals in a specific occupation. As a pilot study, we selected one occupation, tool and die makers; and we are limiting the scope of the survey to the Boston metropolitan area. Our procedure is to interview approximately 400 tool and die makers and their supervisors. In these interviews, we will obtain a complete history of work experience, education, and other relevant personal data. Supervisors are being asked to rank their employees according to the significant work qualities and characteristics of the occupation. The supervisors' rankings will be correlated with the various combinations of education, training and experience. Hopefully, such correlations will suggest the types of training programs that need be developed. The hypothesis to be tested is that the rankings of combinations of education, training, and experience for a single occupation by supervisors in various plants and departments will not be random —that specific combinations generally will rank in a consistent order.

We are approximately three-quarters done with our interviews, and the data are currently being coded in preparation for the various tabulations and correlations. In order to be in a position to make relevant comments at this conference about the findings of our study, I had someone on my staff do a rough hand-count of a number of relevant

findings. The most interesting of these preliminary findings is that there was approximately an equal number of apprenticeship trained tool and die makers ranked at the top of their profession and at the bottom. We also found that an equal number of persons who acquired their skills by "picking it up on the job" were found at the top of the profession and at the bottom.

These preliminary findings are not astounding, but they do indicate that further research and study should be done in the area of training and apprenticeships. We are still in the dark concerning the factors that result in the "best" tool and die makers or other skilled craftsmen. Perhaps the combination of a number of training methods will prove best. Certainly our research efforts should not be limited to improving either related instruction to apprenticeship programs or training under apprenticeship. Training methods other than apprenticeship should also be placed under the scrutiny of research workers in order to investigate the best means of training our skilled manpower.

DON VIAL
UNIVERSITY OF CALIFORNIA, BERKELEY

A person's conceptual framework for consideration of apprenticeship training is quite crucial to any evaluation of related training. Generally speaking, those who are trying to rationalize manpower programs and policies (or formalize more training to equalize opportunities) are likely to be much more critical and less patient of apprenticeship and related training than those who look at the program in its institutional setting, as something more than a way of developing employable skills. Professor Strauss' paper, in pointing to several dilemmas, does a fine job of reducing these conceptual differences concerning apprenticeship to some practical issues in related training. My view is that we are unlikely to find any effective answers to the problems raised without reaching some common ground on the goals of apprenticeship.

The civil rights worker and others involved in opening doors to training under MDTA, OEA, and similar programs, look at the apprenticeship idea and logically want to reform the programs to come to grips with labor market problems as they see them—frequently without much understanding of the institutional setting from which apprenticeship training has developed. In general, the reforms advocated would make the programs more efficient in developing skills to meet short-term demand situations, without much concern for the fragmentation of skills that may be taking place, or the economic and employment security problems that unions must deal with on a long-term basis.

This is to recognize the obvious—that apprenticeship programs are voluntary mechanisms designed to enhance the economic security of

those employed in a craft or occupation as much as they are vehicles for training as such. While I identify with those who want to update apprenticeship so that it may become a more viable method of training in today's labor market, I think it is foolish to expect unions to divorce their apprenticeship programs from their employment security problems. Indeed, I see very little historical evidence, or even current effort, to indicate that government is really prepared to assume responsibility for economic security—to the extent that American unions can now divorce themselves from one of their historic functions and accept evolving manpower policies at their face value. The current slump in home building, despite the generally high level of economic activity, is a good example of the reality with which building tradesmen must deal.

My point, and I think Professor Strauss would agree, is that a criteria based purely on efficiency considerations has little meaning in evaluating related training. Employment of such an "efficiency" criterion would dictate changes in apprenticeship programs that would resolve many of Professor Strauss' dilemmas in a manner unacceptable to the unions involved. Strauss makes the observation, as an expression of union fears, "that once the schools start teaching the trades, they will want some say as to who enters apprenticeship—or even worse, start training people who will work non-union"—for lower wages, of course. Whether or not he overstates the case does not take away from the fact that this kind of fear does exist and that it is more real than imaginary. Accordingly, within the limits of time, the following comments on specific observations by Professor Strauss seem most appropriate.

OJT vs. RELATED TRAINING

I agree with the observation that an arbitrary number of required classroom hours doesn't make much sense, given both the wide differences in the makeup of skills and the way they are actually employed. From an "efficiency" point of view, we should try to find out, through some solid "applied" research into the various trades, what kind of training can be given more effectively in the classroom, and what can be left better to on-the-job experience. But this is much easier said than done, especially if we consider some of the ideals of apprenticeship.

For example, the ideal of the rounded, fully trained craftsman or mechanic makes sense to a union that is seeking to advance the employment security of an individual. But this apprenticeship ideal, as a practical matter, needs to be consistent with the collective bargaining agreement, in the sense that the training program must realistically fit the pattern of employment sanctioned by the collective bargaining agreement and the way the skills are employed. In some crafts where

the skills have become highly specialized, the collective bargaining contract is running way ahead of the apprenticeship program, and the ideals are becoming more difficult, if not very nearly impossible, to implement on the job. Professor Strauss' reference to some of the haphazard training in limited skills that takes place on the job in the name of apprenticeship obviously refers to this problem.

I doubt that an apprenticeship program, irrespective of its ideals, can be expected to produce more rounded craftsmen through on-the-job experience than an industry or trade needs under given demand situations. Forcing a program beyond this limit is likely to produce more partially trained persons through the program, or to increase the drop-out rate. Nevertheless, the ideal of a fully trained person may still be worthy of pursuit for the individual, since the person with more trade skills is likely to have more employment opportunities, whether or not the skills are employed on a fragmented basis.

Perhaps the union that wants to stick to the rounded craftsman ideal in the face of skill dilution on the job will find it necessary, as Professor Strauss suggests, to accept a greater role for related training in the classroom to cover the skills that can't be picked up effectively on the job because of the fragmentation problem. At the same time, this would give a great deal of urgency to overcoming all of the motivational problems raised by Professor Strauss in connection with the dislike for classroom work by apprentices. The unions would also have to take a fresh look at the manipulative skills being taught in the classroom.

PRE-APPRENTICESHIP TRAINING

Pre-apprenticeship training, as Strauss suggests, has a great deal of appeal, since it not only helps to equalize entry opportunities, but also has the flavor of "medical training" and is, therefore, consistent with producing rounded craftsmen in the face of specialization. It would also help to remove some of the heterogeneity problems discussed by Professor Strauss. It is apparent, however, that he is thinking of pre-apprenticeship training as involving a great deal of manipulative work with practical experience to follow; this would go far beyond providing merely background skills in math, theory, etc.

My feeling here is that pre-apprenticeship training needs a clearer definition; it must be directly related to planned apprenticeship openings and made an integral part of apprenticeship programs, if it is to be given a larger role in related training. (As far as unconnected pre-apprenticeship training is concerned, union leaders do not have enough faith in long-term skill projections as a science to overcome some of the fears they may have about economic security problems.)

MANIPULATIVE TRAINING

While I agree generally with Professor Strauss that more manipulative training probably could be undertaken in the classroom—and some of it might be better than the training received on the job—the major limitation is undoubtedly the cost factor, apart from the opposition of unions where it exists. The cost of keeping abreast with technology in the provision of tools, materials, and machinery places a real limitation on classroom manipulative training, even if the skill can be taught better in the classroom.

Again, from an "efficiency" viewpoint, the strongest argument for more manipulative training in the classroom is that it permits a more meaningful teaching of theory. Given the specialized way in which many skills are employed on the job, it is frequently impossible to coordinate classroom theory with the OJT experience of the apprentice—and this is a frequent complaint of apprentices.

In concluding, I obviously see very little hope of resolving the dilemmas raised by Professor Strauss concerning related training unless we first tackle some of the issues which are preventing apprenticeship programs from assuming a more vital role in the field of manpower development. These issues are related more to the adjustment of the programs to changing technologies, and the realities of the labor market, than to how the teaching of skills is divided between the classroom and on the job.

Today, despite the emphasis of manpower programs, the informal methods of picking up skills are still dominant, even among the so-called apprenticeable trades. If the programs are modified to do something about this fact, then I can foresee a melting away of many of the dilemmas in related training.

A STUDY OF REGISTERED JOINT APPRENTICESHIP COMMITTEES IN WISCONSIN BUILDING TRADES

ALAN C. FILLEY and KARL O. MAGNUSEN
THE UNIVERSITY OF WISCONSIN

Researchers and practitioners interested in apprenticeship are well aware of the dearth of contemporary analyses of the apprenticeship movement. The job of describing apprenticeship programs is complicated by the variety of state and federal programs to be found. In recognition of the need for apprenticeship research, the University of Wisconsin's Industrial Relations Research Institute and Center for Studies in Vocational and Technical Education have initiated a series of studies on the subject. The first of these was a doctoral dissertation by G. Soundara Rajan, entitled *A Study of the Registered Apprenticeship Program in Wisconsin*, which has just been published by the Center.[1] The Rajan study represents the first complete account of the state apprenticeship program. The study to be reported here is an intensive analysis of one of the many questions raised in the earlier research.

As indicated in the Rajan study, the number of apprentice registrations in Wisconsin has been undergoing a secular decline similar to that in the nation as a whole. Apprenticeship has been supplying less than 50 percent of Wisconsin's need for skilled labor. For example, supply rates in the building trades for the period 1951-60 varied from a low of 22 percent for painters to a high of 83 percent for bricklayers.[2] The percentage of skilled labor provided by apprenticeship programs, as well as the completion rates of apprentices themselves, are higher in Wisconsin than the national average, yet it is clear that apprenticeship is not realizing its maximum potential as a labor supply device. This seems particularly unfortunate when we consider that some 80 percent of Wisconsin high school students never graduate from college and must seek alternative means for developing marketable job skills.

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1. G. Soundara Rajan, *A Study of the Registered Apprenticeship Program in Wisconsin*, published Ph.D. dissertation (Madison: Center for Studies in Vocational and Technical Education, Industrial Relations Research Institute, The University of Wisconsin, 1966).

2. *Ibid.*, p. 156.

Observation of the apprenticeship program suggests that the Joint Apprenticeship Committee represents a crucial device for affecting both the supply of and the demand for apprentices. Yet, as will be seen shortly, the apprenticeship committees lack formal legal recognition in Wisconsin apprenticeship legislation and have not received the attention that they deserve. Similarly, while observers at the federal level have stated that there seems to be a definite relationship between an active joint labor-management committee and the number and quality of apprentices in training, the Apprenticeship Division in the State Industrial Commission did not begin keeping detailed records on the committees until 1961.[3]

In order to explore more fully the role of joint apprenticeship committees, the present study of Wisconsin building trades committees was conducted by the authors. The objectives of the study were, first, to explain the formal structure of the joint apprenticeship committee system in Wisconsin, and second, to contact all joint committees in the building trades to gather descriptive information on their organization, functions, and methods of operation.

Before reporting the results of our survey on these latter topics, it is important that we place the committee in its proper legal and functional context.

THE JOINT APPRENTICESHIP COMMITTEE SYSTEM IN WISCONSIN

Background: Apprenticeship Law and the Role of Labor and Management

The Wisconsin program of apprenticeship is governed by an apprenticeship law, Chapter 106 of the state statutes. This law, initiated in 1911, was the first of its kind in the United States. Like subsequent apprenticeship legislation throughout the nation, it has been largely promotional rather than procedural. Thus, although there are approximately 200 apprenticeable occupations in Wisconsin, the process of formally indenturing an apprentice is absolutely voluntary in a majority of such occupations. Mandatory indenturing is required, however, in the trades of barbering, cosmetology, watchmaking, plumbing, carpentry, painting and decorating, and the trowel trades.

The Wisconsin apprenticeship law also has a number of features that make it unique among the states. To begin with, Wisconsin designates the administration of its law to the State Industrial Commission,

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3. It should, perhaps, be mentioned that while one can point to a number of problems in apprenticeship training in Wisconsin, one must also be impressed by the steps taken by Mr. Charles Nye, the present Director of the Apprenticeship Division, and his staff to improve the program for the State.

which has a full-time director of apprenticeship heading a special Apprenticeship Division. Any formal indenturing of apprentices must be approved by the Apprenticeship Division (hereafter called the Commission). When an indenture is approved, the apprentice involved is considered to be "registered." Persons learning a skilled trade without the formal indenture-registration arrangement are not considered by the Commission to be genuine apprentices. Secondly, the Wisconsin law integrates the registered apprenticeship program into the state's educational system by requiring that an indentured apprentice must spend not less than four hours per week or the equivalent in classroom related instruction (usually provided in a vocational school) during the first or second year of apprenticeship. If the apprenticeship is longer than two years, the total hours of instruction must not be less than 400. It should be noted here that any occupation is apprenticeable in Wisconsin if at least one year is required to learn it (this contrasts with the two years required under the Fitzgerald Act).[4] Finally, the Wisconsin law is unique because employers of registered apprentices must pay for time spent in related instruction at the same rate per hour as the apprentices receive working on the job.

According to the law, all apprenticeship indentures must contain statements concerning the term of training, the schedule of processes to be worked, school attendance, and wages to be paid. Significantly, however, the law does not specify the exact *content* that must be included in any of these categories; rather, it merely requires that such subjects be discussed to the satisfaction of the Commission. In addition, the law is completely silent on matters such as qualifications of employers, the apprentice-journeyman ratio, maximum apprentice age limits, or minimum probationary periods. Although separate state licensing laws may affect specific matters of content, it should be clear that, in general, the training standards in the various apprenticeable trades and occupations are contingent upon representative labor and management groups taking the initiative and responsibility to form adequate sets of detailed trade standards. When state-wide standards are formed by a trade and approved by the Commission, all indentures in that trade must then conform to those standards.

An important question to be asked at this point is: "How do labor and management organizations, the Industrial Commission, and the vocational schools remain in sufficient contact to insure the development of the most useful training plan for each registered apprentice and trade?" The simple answer to this is "through advisory committees."

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4. Currently there are no one-year apprenticeship programs in Wisconsin. Thus, the entire Wisconsin apprenticeship program is registered with the Federal Bureau of Apprenticeship and Training. A state apprenticeship system must be registered with the latter if the state hopes to gain federal salary support for teachers and administrators of public vocational schools, who provide the related instruction.

We must understand the nature of these advisory committees and their relationship to joint apprenticeship committees, if we are to appraise the operation of these groups.

State and Local Advisory Committees

The vocational education laws in Wisconsin permit the State Board of Vocational and Adult Education to assist in forming state-wide committees in each occupation as may be needed. Meetings of these state-wide committees may be called by the State Board, its director, or by the employer and employee members of the committee itself. Vocational education laws also permit local vocational school boards to assist in forming school advisory committees for occupations represented in their area. All advisory committees must consist of equal numbers of employers and employees selected from candidates submitted by representative organizations of each occupation. Local advisory committees may be called upon by the local director or board for "...advice and assistance in the selection, purchase and installation of equipment, in the preparing of lessons, in developing methods of instruction, in the development of vocational guidance...and for such other purposes as may be found desirable."[5] Local advisory committees must meet at least once a year, and such meetings are held at the request of the local school board or its director. Neither state nor local advisory committees are mentioned in state apprenticeship laws.

Vocational schools and vocational education legislation are directed toward apprenticeship training through their responsibility for providing related instruction. Section 106.01(10) of the Wisconsin Statutes states: "It shall be the duty of all school officers and public school teachers to cooperate with the Industrial Commission of Wisconsin and employers of apprentices to furnish in a public school or any school supported in whole or in part by public moneys, such instruction as may be required to be given apprentices."[6] This responsibility to provide related instruction may not necessarily be compatible with the philosophical changes taking place in vocational schools, for many are restructuring their programs as technical schools or community colleges.[7] In any case, under prevailing practice, when a representative group of employers and employees in a registered apprenticeship program develops specific content requirements which are approved by the

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5. State of Wisconsin, State Board of Vocational and Adult Education, *Wisconsin Laws Relating to Vocational, Technical and Adult Education* (Madison, 1964), p. 20.

6. *Ibid.*, p. 53.

7. The related instruction program in Wisconsin is presently being studied in another research project of the Center.

Commission, the Commission will not only enforce those requirements within the trade, but will also insure that the vocational schools will provide such trade-related instruction as is necessary.

The counterparts of the vocational school advisory committees are the state and area joint apprenticeship committees which advise the Industrial Commission. As will be discussed shortly, the joint apprenticeship committee plays an important role in setting standards for and in overseeing the administration of the apprenticeship program in each trade.

It might be expected that the administrative cloverleaf between school advisory committees and joint apprenticeship committees could become unwieldy and promote duplicate efforts by the Commission and the school boards. However, the Commission has declared: "It is not the Commission's intention to create any new committees if those which exist meet the Commission's requirements."[8] Thus, at both the local and the state levels, if the school advisory committee is in fact representative of labor and management for an apprenticeable trade, the Commission will accept the school committee as a joint apprenticeship committee. Experience up to July, 1966, has indicated that school advisory committees *have* ostensibly met the Commission's requirements—with the exception of the General Apprenticeship Policy Advisory Committee which reports only to the Commission. Noting this one exception, it is generally appropriate to say that ***all joint apprenticeship committees are also school advisory committees.*** (There are, of course, school advisory committees representing non-apprenticeable areas which report to the vocational schools and are not joint apprenticeship committees). Thus, the dual role of the apprenticeship-advisory committees has helped to avoid proliferation of committees in the state. Interestingly, however, it will be seen that the "combined responsibility" aspect of these certain committees may not be altogether clear to the committees themselves.

The compound nature of the committee responsibility may also be a source of potential, if not real, conflict between the Commission and school boards. On the one hand, joint apprenticeship committees are asked to set standards which provide the best possible apprenticeship education in the trade, while on the other hand, as school advisory committees, members may be expected to recommend educational curricula which fit vocational school notions of appropriate instruction for apprentices. This latter expectation is evidenced by the State Vocational Board's statement that "Outstanding strength on the part of either employer or employee organizations must not permit arbitrary dictation

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8. Apprenticeship Division, Wisconsin State Industrial Commission, *Apprenticeship Manual* (2nd Rev.) (Madison, 1964), p. 12.

of school policies which are not in conformity with generally recognized sound practices."[9]

We are not aware of any major conflict arising from the dual committee responsibility of serving both the Commission and the vocational school. Yet this absence of conflict may be the result of omitting functions which would lead to problems. For example, while all local committees are supposed to serve as advisory bodies to the vocational school, recommending proper curricula for the trades, it was reported at the 1949 Wisconsin AFL-CIO convention that local committees did not know whether or not apprentices were receiving proper related instruction.[10] Committees apparently minimized their role as advisory groups to the vocational school in favor of their role as joint committees. In general, the impression is that many committees perform only those activities which are necessary if the committee is to exist at all; that is, that the committee is oriented toward maintenance rather than change.

Types and Functions of Joint Apprenticeship Committees

There are three basic types of joint apprenticeship committees serving the State Industrial Commission. The first of these is the ***General Apprenticeship Policy Advisory Committee.*** The major function of this committee is to assist the Commission in the application of the apprenticeship law and the recommendation of legislative revisions in the law when necessary. The second type of joint committee is the ***state-wide committee*** representing each trade. Such committees recommend minimum trade standards for apprenticeship to the Commission which, if accepted, are then implemented by the area trade committees throughout the state. State-wide committees have existed in Wisconsin since 1918, and they presently continue in the following trades: carpentry, electrical construction, painting and decorating, plumbing, sheet metal work, steamfitting, the trowel trades, barbering, and watchmaking. Since nearly all of the building trades are covered by state committees, and because these committees have provided state standards for apprenticeship training, we would expect to find the area committees covered in this survey strongly influenced by state committee standards.

The third type of joint committee, predominant in the building trades, is the ***area committee.*** Area committees recommend each new apprenticeship applicant and supervise the progress of the apprentice once an indenture is accepted by the Commission. The jurisdictions of these

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9. State Board of Vocational and Adult Education, *The Organization and Function of Advisory Committees* (Rev.), Administration Series Bulletin No. AD–101 (Madison, 1963), p. 5.

10. *Annual Proceedings of the Wisconsin State AFL-CIO* (1949), p. 89.

committees are allied to the vocational school jurisdictions which cover all parts of the state. Thus, an area committee may encompass several cities or one or more counties. It should be mentioned that shop committees, usually found in individual manufacturing establishments, are not advisory to the Commission.

Extent of Apprenticeship Committees

Joint apprenticeship committees have operated in Wisconsin since the early 1900's. Currently, there are approximately 200 joint committees in registered programs throughout the state and an additional undetermined number in unregistered training programs. Most of the registered committees are in the building trades. The preponderance of committees in the building trades probably exists because of (a) the presence of area-wide collective bargaining by employer associations and unions which serve many employers; (b) the inter-employer mobility of apprentices and journeymen; and (c) the traditional concern of the building trades unions for apprenticeship training. While other trades, such as printing, automotive repair, and metal work, also have committees and employ large numbers of journeymen, the formation of committees in such trades is inhibited by the greater frequency of single-establishment rather than multiple-establishment bargaining.

Aside from the collective bargaining structure, other factors also inhibit the development of joint committees.[11] In one case, for example, a city-wide committee of plumbers was not approved by the Commission because a larger county-wide committee already existed.[12] Moreover, there has been a reluctance on the part of some construction trades to form committees where non-union craftsmen or employers would be represented.[13] This seems paradoxical when we consider that the apprenticeship movement had origins quite apart from those of unionism.

In general, the joint committees seem to represent a good example of true labor-management cooperation. We heard a few instances of an initial "bargaining posture" when committees were formed, but these traditional roles soon give way to genuine cooperation on the part of the committee members.

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11. Although not directly applicable to Wisconsin, it should be noted that the likelihood of joint committees in a trade is positively related to the size of the local unions in the area. A study by the Bureau of Apprenticeship and Training in the masonry trade showed that most areas having a local union of more than 100 journeymen reported the existence of joint committees, while one-half of the unions with 50 to 99 journeymen had such committees, and only about one-fourth of the unions with less than 50 members had such committees. For details of the study, refer to the U.S. Department of Labor, Bureau of Apprenticeship and Training, *Apprenticeship in Masonry Construction*, Bulletin T–151 (Washington, 1961), p. 5.

12. Rajan, *op. cit.*, p. 104.

13. *Ibid.*, p. 105.

Having placed the joint apprenticeship committee structure within the context of the state apprenticeship and vocational school systems, we may now look at the results of our survey of actual committees.

RESEARCH METHODOLOGY

While information concerning the general role of the apprenticeship committee may be obtained from published and private sources, little is known of the internal structure and functions of such committees. Thus, we sought in this study to describe the committees and opinions of their members, rather than to engage in more detailed analytical or experimental research. A mailed questionnaire was used for this purpose; it was prepared after a survey of published data and a visit to several committees.

We chose to survey only building trades committees, because they represent a majority of the committees in Wisconsin and because such a limitation increases the homogeneity of our sample. A mailing list of 142 building trades joint committees was obtained from the Industrial Commission, and an eleven-page questionnaire containing both forced-choice and open-ended questions was first pretested and then mailed to the entire committee population. Data collection took place from November 1965 to May 1966. During that time, eleven committees either merged or became defunct, leaving an effective population of 131 area committees. This total covers 35 cities in all parts of Wisconsin and all active committees in the state. Table 1 indicates the distribution of the joint committees by trade and the response from these committees.

The directions accompanying the questionnaire requested that the form be discussed by all members of the given committee and that a group opinion be reflected where possible. This procedure undoubtedly delayed the return and increased the time necessary to complete the questionnaire. Yet a follow-up by mail and by telephone resulted in an eventual return rate of 77 percent (101 questionnaires). This rate of return is considerably higher than that usually experienced with a mail questionnaire and approximates that usually obtained with personal interview surveys.

TABLE 1.

Distribution of the Survey Population and Responding Committees by Trade

Trade	All Committees (1) N	All Committees (2) %	Responding Committees (3) N	Responding Committees (4) % of (1)
Carpentry	20	15%	12	60%
Electrical construction	18	14	13	72
Painting (and decorating)	13	10	11	85
Plumbing	30	23	25	83
Sheet metal	17	13	16	94
Steamfitting	10	8	7	70
Trowel trades (bricklaying, plastering, cement finishing)	17	13	12	71
Miscellaneous construction trades (glazing, iron working, lathing)	6	4	5	83
All trades	N = 131	100%	N = 101	77%

SURVEY RESULTS[14]

The survey provides information concerning the following subject areas: (a) committee structure; (b) member perceptions of committee functions; (c) apprentice-journeyman ratios; (d) personnel procedures; (e) committee activities in influencing related instruction; and (f) judgments by committee members about changes in apprenticeship programs. Except where noted, all percentages are based on a total (N) of 101 committees.

Committee Structure

The most frequent (modal) committee size is six members with an equal number representing labor and management. In 96 percent of the committees the employee members belong to a union, and in 79 percent the employer members belong to a contractors' association of some sort. Committees originate through the efforts of union or employer groups or

14. Detailed statistics on the survey data summarized in this report may be seen in Mr. Magnusen's thesis, bearing the same title as this paper, to be on file in the Memorial Library, The University of Wisconsin, after January 1967. Copies of the thesis are available for the cost of reproduction. Detailed breakdowns of data by specific trades were essentially the same; thus, summary data are reported here.

through the efforts of vocational school representatives. Interestingly, the committees do not consider the Industrial Commission to be a major source of committee formation, although this is consistent with the Commission's policy of utilizing advisory committees as joint apprenticeship committees.

Committees currently in operation have been in existence for a relatively long period of time; few have been started in recent years. Most frequently, committees have been in existence for 19 to 20 years. Thus, most of the formation activity took place at the end of World War II, in response to the postwar boom in apprenticeship training. On the other hand, only 13 percent of the committees have been formed in the last 10 years, probably reflecting the secular decline in new registrations during that time.

The jurisdictional size of the committees in terms of journeymen and apprentices represented is not particularly large. At any one time during the year preceding the survey, most committees represented fewer than 100 journeymen and fewer than 15 apprentices. The most frequent number of apprentices per committee fell in a range between five and nine. It might be noted that most apprentices are indentured to the committee itself and then sub-indentured to individual employers.

Each committee elects its own chairman and secretary. If the employer is elected chairman (as is most frequent[illegible] the case), then the secretary is elected from the employee group. Committee chairmanships are essentially semi-permanent; once a man is elected to the position, he tends to remain in the office indefinitely. Aside from this, however, he holds no special power or privileges. Meetings are called either by the chairman or by the local vocational school director. The latter does so infrequently, however, even though committees are also advisory to the vocational school. Most meetings take place in the local vocational school, and minutes of these meetings are submitted to the Industrial Commission.

Meetings are informal and rather infrequent. Thirteen percent of the committees meet monthly, while 68 percent meet less than seven times per year. In all, committees average 4.7 meetings per year, with the sheet metal trades having the most (6.0) and the trowel trades the least (2.4). Several observers have mentioned that a measure of committee effectiveness is the number of meetings it has per year. Yet a comparison of completion rates with meetings per year and meetings per apprentice indicates that the latter may be a better measure of committee effectiveness.

We were interested in determining the communication which committees had with outside sources of information. For this reason, committees were asked to report visitations by consultants from state agencies or by persons generally interested in apprenticeship. During the twelve-month period preceding the survey, 67 percent of all committees were visited by one or more agencies or persons. The Industrial

Commission was most active in this respect; its six field men contacted 48 percent of the committees. A representative of the Federal Bureau of Apprenticeship and Training visited 33 percent of the committees, while representatives of the vocational schools visited 23 percent of the committees. The latter is surprising, in view of the advisory function of the committees in the local vocational schools.

In this same connection, it is also interesting to note that committees having the fewest meetings per year are more likely to have visitors than those which meet frequently. Perhaps the committees which meet infrequently are in the greatest need of advice. At least, the consultants do not seem to be visiting only those committees which have convenient meeting schedules. It would seem useful for committees in the same trade to pay visits to each other or to invite persons who could give them new ideas or information, yet this does not seem to be the case. Since committee members serve without pay and on their own time, they may not want to visit other committees. Or, the establishment in 1962 of the practice of biennial state apprenticeship conferences may have reduced the need for visitors from similar committees.

Committees seldom have financial support. In fact, 78 percent of them have no source of financing. Even where committees do have some kind of financial support, most of it is used to cover the basic costs of committee operation. Promotional programs such as "best apprentice" contests are virtually nonexistent; however, some attention is given to the purchase of special educational materials. The source of funds is also varied. Joint employer-union contributions are common in the electrical and steamfitting trades, while employer contributions alone are more typical in the carpentry, painting, and sheet metal trades. The union is most apt to carry the burden of committee financing in the plumbing trade. The lack of consistency in providing financial assistance and, for that matter, the entire question of committee finances, has led some committees to suggest that a joint contribution should be required by the union and all employers in a committee's jurisdiction who might hire apprentices, whether or not they actually do so. Committees posing this suggestion feel that not only would the committees obtain financial aid, but also that employers who do not train apprentices would then have an incentive to do so if they wanted a return on their money contribution.

Although committees play a vital labor market function, they do not seem to possess detailed records or information in that area. Most committees can give accurate figures on how many apprentices they have and how far along apprentices are in their indentures. They apparently pay no attention to completion rates or to the other means of entrance to their trade. More importantly, they do not usually have information on employers who are training apprentices, who have in the past trained apprentices, or who have not trained apprentices but are able to do so. Such basic labor market information would probably be helpful as a cri-

terion for estimating future demands for apprentices in their areas. The Industrial Commission currently has a data-processing project under way that will provide committees with better employer information.

Committee Functions

Although committee functions are outlined in the *Apprenticeship Manual* of the Industrial Commission, one goal of the study was to ask the committees how they perceived the relative importance of their activities, in order to develop an over-all ranking and to identify committee differences by trade. The results indicate, however, that the perceptions committees have of their functions vary little according to individual trade, number of meetings held, or the number of apprentices per committee.

As a general pattern, committees tend to think of their most important functions as: (1) selecting and recommending men who want to apprentice; (2) determining qualifications of employers who want apprentices; (3) interviewing apprentices in front of the committee to check on their progress; (4) reviewing work standards and recommending changes in related instruction; and (5) deciding whether time credit should be given to an apprentice applicant for past training or experience. Activities that seem to fall into the middle range of importance include: (6) placing apprentices who have been laid off; (7) reviewing apprentice work records; (8) estimating the future demand for skilled workers in the trade; (9) settling grievances; and (10) enforcing the apprentice-journeyman ratio. Finally, the committees think of their least important functions as: (11) checking to see that the indentures are correctly written and enforced; (12) rotating apprentices between shops according to some schedule; and (13) determining what percentage of the journeyman rate should be paid to apprentices.

If it is assumed that the perceived functions correspond to accomplished functions, then the above ordering provides some initial insights into committee operations. To begin with, the fact that the committees consider their most important activities to be those dealing with the selection of apprentice candidates and employers is consistent with the Industrial Commission's feeling that the most important committee function is to make recommendations for the approval or disapproval of each new apprenticeship. Similarly, the committees and the Commission also agree that detecting needed changes in related instruction is important. On the other hand, whereas the Commission feels that committees could be of particular service in the supervision of apprentices to insure quality training, the committees seem to feel that checking to see that indentures are correctly written in the first place, and then subsequently enforced, is not one of their major activities. This is particularly surprising because, it will be recalled, a majority of apprentices are indentured directly to these committees.

An initial view of the committees, then, indicates that their functional scope seems limited for the most part to the selection of persons wanting to participate in the apprenticeship program. They seem to do little in the way of over-all apprentice supervision or promotional activity. Additional evidence relating to committee operations will be cited in later sections, following a discussion of the apprentice-journeyman ratio.

Apprentice-Journeyman Ratios

The apprentice-journeyman ratio, found in most building trade bargaining agreements, is a device used to protect the jobs and wages of craftsmen by limiting the number of journeymen entering the trade. The ratio is usually applied to individual employing establishments and is most commonly designated as 1-to-3 or 1-to-5.

A surprising degree of controversy and misunderstanding surrounds such ratios. Unions claim that employers have fewer apprentices than the ratios allow, whereas employers claim that the ratios prevent them from hiring apprentices. Both arguments are correct, depending upon the interpretation of the ratio. In the first place, since very few Wisconsin employers train apprentices, it is clear that most employers do not have as many apprentices as the ratios would allow them to have.[15] On the other hand, as applied to individual shops, the ratio may be highly restrictive. This, again, depends on the interpretation of how the ratio should be applied. As examples: a 1-to-5 ratio may, and often does, mean that any employer with one legal apprentice and five journeymen must wait until he has ten journeymen before obtaining a second apprentice; or, a 1-to-5 ratio may mean that when an employer has one apprentice and five journeymen, he may then hire a second apprentice before hiring additional journeymen. While the latter example would not necessarily be restrictive, the former example most certainly would be highly restrictive. Regardless, any arbitrary ratio fails to take into account the differing conditions for training apprentices. Employers who have conditions well suited to the training of apprentices and journeymen skilled in teaching the trade, are treated no differently by the ratio than employers where conditions are less suited to training.

Other characteristics of the ratios also seem undesirable. For one thing, they are not adjusted to reflect or anticipate changes in the labor market. A 58 percent majority of the committees (N = 72) have never changed their initially established apprentice-journeyman ratios. Apparently, committees keep the same ratio and merely make adjustments in the rate of apprenticeship after a labor shortage or surplus develops.

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15. State officials estimate that between 8 and 20 percent of Wisconsin employers train apprentices. The Industrial Commission currently has underway a project which will allow refinements of such estimates.

Secondly, the ratios do not necessarily affect the rate of "back-door" entry to the trades. The *actual* ratio of apprentices to journeymen in this survey is 1-to-8.5. This actual ratio and the apprenticeship supply rates reported earlier both suggest that either more journeymen have entered the trade than the ratios allow, or, alternatively, that fewer apprenticeships have been utilized than might actually be permitted. In reality, both conditions seem to be operating. There is a significant degree of "back-door" entry into many trades; furthermore, recalling that relatively few employers train apprentices in the first place, ratios are restrictive for those individual employers who *agree* to train apprentices. If one assumes the superiority of apprenticeship as a training device, then the ratios may hamper the efforts of the committees to promote the use of that device.

The cost considerations of the employer in hiring apprentices are not entirely clear. It would seem that, for some employers at least, it would be quite economical to employ apprentices, particularly where journeymen and operations are attuned to such training; in other cases, it may be less expensive for the employer to hire only journeymen, or, for that matter, to substitute labor-saving devices and eliminate some journeyman labor altogether.

Committee Selection Procedures

The description of the selection activities used by committees points to some curious inconsistencies. Committees reported an average of 4.8 openings each during the year preceding the study, and a majority (65 percent) reported having waiting lists of apprentice applicants. However, the sources which committees most frequently use for selection of candidates are referrals from employers and applicants to committees themselves. It would therefore appear that, in many cases, the committees are merely approving employer-selected applicants, rather than utilizing their established screening processes. It must be recognized, to be sure, that committees frequently get applications from persons who apply indiscriminately to a number of trades at the same time. But this practice does not free the committees from the obligation of properly screening all applicants.

Committees seldom refuse apprentices to employers when requested. Only 11 percent of the committees (N = 90) said that they had refused to grant an apprentice to an employer during the past year; the major reason given for such refusals was the belief that the employer was "unqualified," meaning that he did not operate mainly in the trade for which he wanted an apprentice.

Considering the selection procedure itself, committees rely primarily upon a personal interview before the committee and upon a testing program. The exact meaning of each of these devices varies greatly among committees, however. For example, a majority (58 percent) do not use

any particular device to rate the apprentice or guide the interview. On the other hand, 38 percent of the committees use a standardized apprentice candidate evaluation chart provided by the Industrial Commission. The latter charts are based on a point system, and each committee member rates the candidate on such factors as age, physical condition, education, test scores, and general impressions of ability. A majority of the committees do not use these charts because they feel that committee members cannot be objective in awarding point values on the various factors. Given the obvious weaknesses in most rating devices, personnel experts point out that (a) systematic rating devices are generally superior to over-all impressions by raters, and (b) training in the use of rating devices improves the skill of the rater.

The use of tests in apprenticeship selection enjoys a much greater popularity than the use of evaluation charts. Currently, 77 percent of all committees use text scores as one basis for selection, even though testing in the building trades did not become popular until 1958. Of the committees using tests, 55 percent have them administered by the local vocational schools, and 33 percent use the Wisconsin State Employment Service for testing.

Unfortunately, however, there is no unified system of apprenticeship testing in the state. For one thing, there is no single policy on the reporting of test scores. The Employment Service gives no actual test scores, reporting merely whether the candidate passed or failed the test. The Industrial Commission prefers this type of reporting, but has not issued a formal written directive based on its feelings. In contrast, many of the local vocational schools actually report specific test score results to the committees. In fact, the State Board of Vocational and Adult Education has published a pamphlet entitled "Apprentice Testing" to aid committee members in interpreting test results.

Survey results also indicate that there is no standardized battery of tests in use for apprentice selection. The Employment Service typically uses the General Aptitude Test Battery, while the vocational schools generally use several types. The following are popular:

1. ***Mental Maturity:*** The test used is the "New California Short Form Test of Mental Maturity, Advanced '50 S Form.'" This is basically an intelligence test measuring verbal and numerical ability.
2. ***Mechanical Aptitude—Visualization:*** The test used is the "Revised Minnesota Paper Form Board Test."
3. ***Mechanical Aptitude—Comprehension:*** The test used is the "Test of Mechanical Comprehension, Form AA."
4. ***Manual Dexterity:*** The test used is the "Purdue Peg Board."
5. ***Vocational Interest:*** The test used is the "Occupational Interest Inventory Advanced Form A."

Other tests are used as well. The range covers the spectrum measures of "skill" to "aptitude" to "vocational interest" to "personality."

It should be noted that some of these devices are probably inappropriate as measures of apprenticeship ability, in the first place; that some types—notably interest and personality tests—have been subjected to severe criticism as selection devices; that tests are of questionable value unless their results are properly interpreted; and finally, that no test should be used without information on its validity in selecting from a particular group of applicants.

The variety of tests and the difference in reporting test results do not seem to help the joint committees understand their own testing programs. Of the committees using tests, only 20 percent can list the specific tests which they require applicants to take. Consequently, we may speculate on the degree to which committees can make a judgment regarding the candidates' performance on the tests. In addition, we might ask, can a committee decide whether a candidate has passed his Minnesota Multiphasic Personality Inventory?!

As we have implied, there are no state-wide norms providing validating information on all of the tests used. Such norms as do exist, formal or informal, seem to be the following: (1) the Employment Service uses a national set of apprentice test norms; (2) the vocational schools which use tests cited in the "Apprentice Testing" booklet have access to norms developed in 1959 by Stout State College (which may be out of date); and (3) other vocational schools may have or may develop norms for their own tests. We also have reason to believe that norms used by the Employment Service are lower than norms used by vocational schools on the same tests. Thus, it is conceivable that a man might pass a test at the Employment Service which he would fail at a vocational school.

If tests are to be given at all, it would seem that their use should be much improved. Because of the "scientism" which surrounds selection tests, there is a real danger that inappropriate test results will become a substitute for more appropriate selection devices of a less "scientific" nature. At present, there is a good reason to believe that tests, while popular, are not particularly significant as selection devices in the committees. A majority (72 percent) of all joint committees using tests allow a candidate to take the tests a second time, if for some reason he fails them the first.

Related Instruction: Development and Improvement

There is some evidence to suggest that the joint committees do not have much effect on local programs of related instruction. While this may reflect reliance on state standards, the advisory nature of the committees with respect to the local vocational schools would suggest a more active role than is apparent from our survey data. Only 30 percent of the committees (N = 98) decide, with or without consultation of apprentices, whether a change in related instruction is needed. An-

other 20 percent consult with the vocational school in making such decisions, while an additional 30 percent rely upon the vocational school or other organizations (such as national or state joint apprenticeship committees) to decide on matters concerning related instruction.

In many cases, however, state standards do not specify a particular course of related instruction to be followed by the vocational school. This suggests that, in fact, some committees are working under the assumption that the vocational schools know what type of related instruction is best for the various types of training, when the schools do not.

In spite of their deferential role with respect to the vocational schools on matters of related instruction, the committees are not completely satisfied with the related instruction that their apprentices are getting. Forty-two percent of the committees (N = 98) indicate a dissatisfaction with the programs and specifically mention changes which they feel ought to be made. Their suggestions fall into six general categories, which when ordered by frequency cover the following: (1) the provision of better related instruction and facilities; (2) the provision of more hours of related instruction; (3) the provision of more circuit instructors; (4) the addition of new courses in the curricula; (5) the development of better communication between participating agencies; and (6) the teaching of more "practical" related instruction in the schools.

Committee Opinions on Current Apprenticeship Issues

Apart from pre-apprenticeship training, there are a number of other issues being discussed by manpower experts as ways of improving apprenticeship programs. We asked committees for their opinions regarding these issues.

To begin with, more committees favor than oppose the idea that employers who train apprentices should be allowed tax credits for their efforts. Committees also favor the use of federal subsidies similar to the GI Bill to encourage young men to apprentice. This probably reflects the knowledge that most apprentices in the United States are in their middle twenties and married and consequently have difficulty living on apprentice wages during the first two years of training. Committees seem to favor minimal government involvement in trade matters, however, since they more frequently oppose than favor a procedure which would require government contractors to train a specified number of apprentices in order to gain such contracts in the first place.

Committees also disagree with the idea of reducing the length of apprenticeship training by providing more intensive related instruction. Several possible explanations exist for this disagreement. Employers dislike the fact that new journeymen sometimes leave the shop in which they were trained in favor of another employer. This may also explain their reluctance to support the rotation of apprentices between shops.

One committee also told us that job rotation is not encouraged, because "trade secrets" are communicated to competitors. Unions, on the other hand, may not want training periods reduced, because this might increase the number of men entering the trades. The reluctance to intensify related instruction may also reflect a disenchantment with such instruction itself. [16]

Finally, the committees disagree with suggestions that (a) the requirement that employers pay wages to apprentices while they are in school should be eliminated; and (b) apprentices should attend night school and pay for their own related instruction instead of going to day school. We find this result intriguing, since complaints are often heard in Wisconsin about employers being required to pay wages to apprentices while they are attending school. Perhaps the union members of the committees influenced the responses on this question, or perhaps the actual objection to this rule is more imagined than real.

CONCLUSIONS AND RECOMMENDATIONS

The present study has been concerned with describing practices and opinions of the committees as they exist, rather than with determining what they should do. Our research does not distinguish between the practices and opinion of good versus poor committees, nor does it reflect the relatively high stature of the Wisconsin program or the recent efforts by the Industrial Commission and other state and federal agencies to improve the present program. Yet the survey does suggest some areas which warrant investigation and possible improvement. We list the following as worthy of consideration:

1. Committees should be given legislative recognition, and their dual responsibility to the vocational school and the Commission should be clarified.
2. The structure and administrative procedures of the committees should be outlined in a manual published by a state agency and explained in a state training program for committee members.
   (a) A committee description should be prepared, much like job descriptions used in industry.
   (b) the chairman and membership should be changed periodically.
   (c) Committees might benefit by having "outside" members, such as local vocational counselors, vocational school officials, local university faculty, members of the state apprenticeship

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16. Criticisms of related instruction abound. Yet it is not altogether clear that these should be leveled at the vocational schools themselves or, for that matter, that they are entirely justified. It is possible, for example, that apprentices with a trade objective as a career are not happy with the idea of going back to school. Our forthcoming study on related instruction itself should provide some answers to this question.

committee, etc., participate more frequently in committee meetings.

(d) Committee membership should be given training in selection and evaluation procedures.

3. Committees need better information on apprenticeship practices within and outside the state. Members might visit similar trade committees elsewhere; members or their representatives should meet annually with members of the state committee; and experimental programs might be initiated in selected areas of the state.
4. Committees need at least a modest budget. Funds might come from unions and employers or from the local vocational schools.
5. Committees need better information on labor market conditions, particularly on skill shortages and on employers who could train apprentices but do not.
6. The traditional limitation of apprentice-journeyman ratios should be modified to reflect changes in the labor market, unique local conditions, and individual differences between employers in ability to train apprentices.
7. Evaluation is needed, so that recruiting efforts may be directed to the most productive sources. In particular, high school vocational counselors should be apprised of apprenticeship opportunities.
8. The testing program for apprentice selection should be studied by a state agency, and standards for testing developed. Tests need validation, norms need establishment, and committee members need information on the meaning or interpretation of test results.
9. Creative new programs should be considered, such as tax credits for employers training apprentices, pre-apprenticeship training, apprenticeship in new skill areas not now apprenticeable, revision of joint committee jurisdictions, or post-apprenticeship refresher courses for journeymen in areas of changing technology.

Perhaps the greatest single impression coming from our study of joint committees is that isolated groups of men serve with dedication and little personal reward, while many sources of information and support remain unknown and unused.

DISCUSSION

HERBERT A. PERRY
SACRAMENTO STATE COLLEGE

It is significant that Filley and Magnusen note the decline of apprenticeship in the introduction to their paper. While the work force is growing, apprenticeable occupations are either growing very little or are declining. Their paper is about building trades apprenticeship committees, and it is in the static building and construction crafts where apprenticeship is concentrated. Apprenticeship then, while of key importance in the building and construction industry, is not enjoying much popularity elsewhere in industry as a means of training for skills.

The objective of this study is to describe the origin, functions, organization, and methods of operation of apprenticeship committees and offer suggestions for improvements and research. Consequently, it is mainly descriptive, with some analysis based on the results of a questionnaire survey. I would like to comment on several points which I think are important or need clarification.

It is suggested that because apprentice committees in Wisconsin lack legal recognition or legal powers they cannot function as well as they might. It may be of value to look at the California experience where Joint Apprenticeship committees seem to play a stronger role and are given both powers and money through collective bargaining which enable them to do a better job of supervising apprentice programs. The British experience, where Industrial Training Councils have the power to tax employer constituents and establish quotas, may also give some insight into possible improvements.

The Wisconsin apprenticeship law of 1911 is largely permissive and promotional; and like most apprenticeship legislation it reflects the fact that trade unions which promoted such legislation are very much concerned about restricting entry into their ranks and protecting themselves against skill dilution. This should be kept in mind when we are discussing apprenticeship as a training institution.

On page 82 the authors note a reluctance on the part of authorities to form a p p r e n t i c e committees where non-union journeymen or employers would be represented. They state: "This seems paradoxical when one considers that the apprenticeship movement had origins quite apart from that of unionism." The guilds and early craft unions were

very much concerned about apprenticeship, and some scholars claim that craft unions were formed mainly to promote its maintenance. Apprenticeship has long been a part of the craft unions' strategy as a device to restrict entry into the trade and promote job security. Today many non-union employers avoid involvement with formal apprenticeship because they identify it with unionism. I feel the authors should check this out and clarify the statement.

Their point that apprenticeship committees were more likely to be found where local unions are large indicates the importance of trade union involvement. It is said that apprenticeship committees *seem* to represent true labor-management cooperation. Could it be that they are usually evidence of strong and effective trade union domination of the craft and apprentice training? I feel that in the majority of cases in the building trades, the unions are the backbone of apprenticeship, and they dominate the committees.

There is a weakness evident in this paper stemming from the fact that the information obtained on apprenticeship committees depended upon a mailed questionnaire. Filling out questionnaires often gives an opportunity for good "creative writing," modified by a sensitivity to good public relations practice. In recent years "outsiders" have shown enough concern about apprenticeship to condition craft unions and building trades employers in answering questionnaires from academic institutions. I would suggest that close observation through attendance at meetings and many personal interviews with all participants over a longer period of time would result in a more realistic picture of how apprenticeship committees operate.

The survey results do, however, point up some significant facts about these committees. One very important item is that the committee members perceive their most important functions as (1) selecting apprentices, (2) qualifying employers to train apprentices, (3) reviewing apprentices' progress, and (4) determining the need for changing work standards. The actual supervision of apprenticeship programs and checking to see that indentures have the correct content are considered of least importance. In California, the best apprentice programs are generally those where the joint apprenticeship committee has hired a full-time coordinator to carry out the supervisory and enforcement functions which the committees feel are of great importance. This may indicate that in Wisconsin the committees do not have the legal right to enforcement, and that the Industrial Commission retains this right. It also may be evidence that the trade union goal of restricting entry into the trade is deemed more important than the quality of training.

The survey mentions that referrals from employers are the most frequent source for apprentice candidates, and that most crafts have waiting lists, so that recruitment is not a problem. Getting into an apprenticeship program is still largely a matter of having or making the right connections. It would have been of interest to know how important nepotism is in the Wisconsin building trades. There is evidence that

few employers are disqualified to train apprentices. It would be interesting to know what the criteria are for qualification. With most employers reluctant to hire apprentices and train them properly, I suspect that a willingness to hire an apprentice is more often than not the sole criteria for qualifying.

There is plenty of evidence in this paper that selection procedures vary considerably among committees, and that testing is not standardized or used in a consistent manner. The establishment of standard tests and selection procedures would be desirable, and there is definitely need for further research in this area. I note that The University of Wisconsin is presently beginning a study of related technical instruction which may also include the proper application of testing to apprenticeship selection and training. A shortcoming of apprenticeship committees is evident in this area; and the survey indicates that the committees seem to exercise little influence on or interest in keeping related training program content up to date. It may be an indication that they are not qualified to do so unless aided by technical education specialists who could draw on the practical experience of committee members, but assume the responsibility for initiating change.

Apprenticeship committee members favored tax credits and government subsidies, but were against increasing government involvement in apprenticeship. They appear generally to favor the *status quo* on length of training, expansion of classroom training, and other changes more in line with new technology in the industry. This is further evidence of concern about the controlling function of apprenticeship and the fear that government intervention will limit the building craft unions' ability to restrict entry and discriminate in their hiring halls.

It seems to me that the union members of the apprenticeship committees dominate, and that there is need for a confidential survey of building and construction employers to find out what they think individually. Their involvement in collective bargaining and joint committees, and their need for a sound relationship with the unions, precludes their being free agents in the type of questionnaire used in this study. Non-union contractors do not participate in or promote formal apprenticeship training; and they deviate considerably from the practices of union contractors. What would the union contractors do if released from the requirements of the collective bargaining agreements?

The conclusions and recommendations in this study were valid, in the light of this survey, except for the following: If there are going to be experimental and creative new programs established, how do you overcome the *status quo* orientation of the apprenticeship committees without substantial change in the way apprenticeship is administered? Why is there such a need to work on the sources of recruitment and better equip the high school counselors when the programs seem to be able to get enough apprentices now, and no need for expansion is indicated? Most journeymen do not serve apprenticeships, but pick up their skills in other ways and come into the trades through the "back

door" under the regulation of union hiring halls. This indicates there is need for and probably support for journeymen skill-improvement programs, but because of the restrictive function of apprenticeship, and the present union satisfaction with the way it is structured, other changes in apprenticeship will probably be opposed.

This paper reinforces my contention that trade unions generally dominate apprenticeship in the building and construction industry, and until the industry becomes more stabilized, and more is known about labor market conditions, future skill needs, and how to predict them, we cannot expect unions to help much in effecting change. Reform will have to come from without, and it will be resisted unless it is accompanied by improvements in job security.

The federal government is in the manpower business in a big way now and will become more involved in the future. Apprenticeship may be limited to a small part of our work force, but it is important—particularly in construction and some of the metal trades. It will receive a great deal of attention, and, therefore, we can expect volunteerism to be replaced by the "partnership approach," with apprenticeship committees doing more advising and less administering, while government makes the decisions.

CHARLES F. HANNA
STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS

A review of Mr. Alan C. Filley's study identifies many factors that deserve further serious consideration. His paper indicates that the Wisconsin joint apprenticeship committees (JAC's) are in most respects similar to those in other states. It further reveals that the pattern of labor-management cooperation advocated by the U.S. Department of Labor, Bureau of Apprenticeship and Training, under the Fitzgerald Act, is commin to all JAC's, and that there are few apprenticeship committees successfully operating which do not have labor-management representation in equal parts, and appropriate consultation provided by the schools and apprenticeship agencies. The study is in many respects superficial, and a further study in depth would cause the researchers to modify some of their conclusions.

Following are the principal differences between the Wisconsin program and others: (1) Instead of a state apprenticeship council consisting of equal representation from labor and management with representation from appropriate agencies of government, the Wisconsin Industrial Commission administers the program at the state level; (2) There is a provision in the Wisconsin law for classes of related and supplemental instruction on "company time;" (3) In Wisconsin, as in other states, the apprenticeship systems provide only a part of the skilled craftsmen needed by industry. It becomes equally apparent that the

craftsmen who do come through apprenticeship are a key part of any industry, and without them the industry could not operate. (4) Then, too, public attention to practically every other type of education and training has been much greater than the attention and support given to apprenticeship systems. Inattention and opposition by some agencies of government, both state and federal, has caused some industries, such as the building and construction trades, to develop funds necessary for the support of their apprenticeship systems. Governmental support of all kinds for apprenticeship in the United States averages about $50 per apprentice for apprenticeship agency services, and $60—$70 for the cost of school classes in related and supplemental instruction. This fact alone is the major reason for the far too few apprenticeship systems and registered apprentices; (5) Very few states have anything that approaches mandatory apprenticeship, and it is unlikely that industry would accept mandatory apprenticeship programs; (6) Federal funding for the cost of the schools' support has been provided under the Smith-Hughes and George-Barden Acts, and, more recently, the Perkins Acts. These funds, however, are used regardless of whether the apprentices in such classes are "registered;" (7) The Wisconsin requirement that wages be paid while the apprentice is off the job and in the classroom has been tried in many other states on a voluntary basis. In general, it is found that while the classroom attendance is better, many employers prefer not to participate at all rather than pay wages for non-productive time; (8) In Wisconsin, as in most other states, most local apprenticeship standards conform to national standards—where there are such standards. This has resulted in the general recognition of apprenticeship completion certificates issued by any state or by the Federal Bureau of Apprenticeship and Training. This national, state and local pattern of uniformity has resulted in reasonably uniform training of apprentices; for example, a tool and die maker trained in Wisconsin masters the necessary basic skills and knowledge for practicing as a tool and die maker journeyman in any state.

In Mr. Filley's paper, there was a discussion of the development of joint apprenticeship committees, as administers for local programs and trade advisory committees (TAC's), to advise the schools regarding the related and supplemental instruction given in the classroom. Generally, the schools as well as labor and management have agreed that the school TAC and the JAC should consist of common membership. A conflict and duplication of service often arises when membership of the TAC is selected by the schools, and different membership of the JAC is selected by labor and management. Because of the traditional pattern of providing classroom instruction, most schools have found it difficult to provide the appropriate related and supplemental instruction at the same time that the apprentice is practicing the same part of his trade on the job. As a result, instruction is quite often unrelated to the work being done at the time. There has been much discussion of so-called unregis-

tered apprenticeship training programs. There are only comparatively few such unregistered programs that follow any recognizable organized system of training. A great many individuals who somehow manage to acquire journeyman status had to secure their skill and knowledge in a hit-or-miss manner and, generally, are only instructed in those things which the employer currently wants them to do; very few of them, if any, have had instruction in the "brain work" that goes with the practice. As a consequence, they are peripheral journeymen and subject to longer periods of unemployment.

It is difficult, if not impossible to establish "joint apprenticeship committees" when there is no labor organization, because it is only through the labor organization that *bona fide* representatives of the employees may be selected.

COMMITTEE STRUCTURE

It is reasonable to assume (although the Wisconsin study did not reveal this) that most, if not all, of the JAC's were aided in their organization problems by either a representative of the Bureau of Apprenticeship and Training, or of the Wisconsin Industrial Commission. For a period following World War II there was a substantial need to organize JAC's; this diminished as committees were developed in sufficient numbers to cover the state. This would account for the few committees being developed at present. The JAC structure is primarily voluntary and is unique in this respect. Members of the JAC's have devoted a substantial number of manhours to the state's purpose in administering apprenticeship systems. There is of necessity constant change, replacement and training of new JAC members.

If the supporting agencies are active and vigorous, they assume many of the functions of a JAC. In other instances, JAC's have their own funds and coordinator, and this in itself reduces the necessity of a great many meetings of the JAC's, who are basically policy makers. Too many joint committees spend too much of their time acting as truant officers to insure attendance at classes, and much too little time in seeing to it that appropriate rotation on the job is achieved.

Upon superficial examination, the Wisconsin apprenticeship committees may appear to operate somewhat in a vacuum. However, this is not actually the case because the statewide committees, the Industrial Commission—the Wisconsin state apprenticeship agency—and the Wisconsin State Apprenticeship Conference all act to achieve a greater exchange of ideas, and a much greater degree of uniformity than appears on the surface. Wisconsin JAC's, significantly, are more active in manufacturing and metal trades apprenticeship programs than are JAC's of other states; and, since the building trades originated and have almost completely negotiated apprenticeship and training funds, it follows

that the funding of other programs would be less in Wisconsin than in most other states. Over-all apprenticeship statistics are compiled by the Wisconsin Industrial Commission and are available to JAC's. The failure of their JAC's to maintain good on-the-job training records is common, and requires substantially greater effort than is currently available. The dearth of good labor market data concerning needs of journeymen is common in all states, and much more research is needed. Maintaining attendance at classes of related and supplemental instruction is no problem in Wisconsin because of the paid classes.

Another important JAC function which has been emphasized recently in federal civil rights legislation is the fair and impartial selection of apprentice applicants. Joint committees are now required to develop such selection procedures, and to administer the program so as to assure equal opportunity for all.

APPRENTICESHIP JOURNEYMEN RATIOS

The agreed ratios of apprentices to journeymen are filled in very few instances—both in Wisconsin and in other states. Ratios were originally developed to provide orderly replacement and additions to the trade. However, very little research has been done to develop any accurate formula for replacement of journeymen through the apprenticeship systems. Very few ratios are ever filled. The apprenticeship standards provide that the employer can employ up to the ratio which has been agreed to by the union. Consequently, the principal reason that ratios are not filled is the fact that all employers do not employ apprentices up to their agreed ratios. It is not the ratios of apprentices to journeymen that has significant effect on the number of apprentice-trained journeymen produced, but the economy itself which has a controlling effect. The dearth of long-range projections as to expansion or contraction in any industry leaves most apprenticeship programs in the dark. It is well known that in Wisconsin and in most states, even in short periods of high unemployment when journeymen are unemployed, the number of apprentices admitted declines; and when the economy improves in any industry, then employers hire back most of the unemployed journeymen before adding new apprentices. In some instances, compulsory ratios have been added to collective bargaining agreements and, in others, reimbursement for "cost of training" has been offered, but neither of these have had an appreciable effect in providing enough apprenticeship openings on a continuing basis. There is even a wide variety of opinion amongst employers as to whether apprenticeship actually costs money or, on a long-range basis, is a profit making venture.

Selection procedures are receiving close attention as a result of civil rights' activity. All committees are required to review their selec-

tion procedures and modify them to meet current federal regulations. It is, however, quite clear that the more precise and scientific the selection procedure may be, and the higher the minimum qualifications, the less the disadvantaged minority groups compete successfully. Their failure to secure enough apprenticeship openings, however, is generally blamed on the apprenticeship system rather than on the conditions that were imposed upon them prior to applying for apprenticeship—not the least of which is a defective basic education. In California, the regulations governing selection are being codified, and guidelines regarding those items which may be included in the selection procedure are under consideration. No one has yet devised tests to actually forecast the success or failure of an applicant. In Wisconsin, as well as in most other states, considerably more research must be done to develop fair and impartial selection processes that are really effective.

RELATED AND SUPPLEMENTAL INSTRUCTION

Practically every state has done work on the development of related and supplemental instruction curriculum. In California this has been centralized at the state level, and many states purchase curriculum developed by the California Bureau of Industrial Education. However, it apparently has not as yet occurred to the federal government to coordinate this effort so that development of a curriculum for a trade might be assigned to one state, and curriculum for another trade to another state. Thus, the aggregate duplication of this effort at local, state and national levels could be reduced.

Development of curriculum, teacher training and teaching is left to the schools with advice from industry committees. There are many advocates for teaching all of a trade in school. This, of course, reduces the amount of time for teaching essential theory. Many incentive systems have been discussed. None are in effect as yet, other than those minimally supported under MDTA. The tax abatement bill, known as the Human Investment Act, has been considered; but the Bureau of Internal Revenue would be brought into the picture, and they are not a training agency in any sense of the word. Secondly, it would be difficult, if not impossible, to insure that tax credits claimed for training would have actually resulted in appropriate and proper training.

Much ado is made of the length of training, whereas it is actually immaterial. No harm is done if a few additional months are devoted to apprenticeship—particularly during the final periods—inasmuch as the apprentice is producing and earning almost as much as a journeyman. On the other hand, reducing the period of training to less than is essential for mastery of the skill and knowledge of the trade results in a permanent loss to the apprentice.

In general, the conclusions reached by Messrs. Filley and Magnusen appear to be reasonably sound. It is clear that more professional consultants should be available to industry, and wider sources of recruitment should be employed. The basic qualifications should be reviewed so that only those qualifications essential to learning the trade are required, rather than testing for higher education, previous experience and many other extraneous matters. It is clear, too, that the program depends to a great extent on voluntary donations of manhours, and that all agencies of government have provided far too little financial support thus far. The only thing seriously defective about apprenticeship is that too many who should, do not contribute.

Section III

Charles T. Nye, Chairman

A PERSPECTIVE ON APPRENTICESHIP TODAY

HUGH MURPHY
U.S. DEPARTMENT OF LABOR

The great American pastime of taking surveys and totaling numbers into statistics and projections has become a way of life much like the ancient Greeks who climbed Mt. Olympus to listen to the oracle.

As our population grows and our improved means of communications shrinks our national boundaries, greater emphasis seems to be placed on the consensus rather than the individual. The industry of the hard-working carpenter or bricklayer is lumped into a homogenous whole and called the building and construction industry. The apprentice machinist in a tool and die shop becomes a digit in something called an apprenticeship program. Several industries are listed together because they train skilled workers through apprenticeship systems, and the entire amalgam of occupations in several industries is referred to as the apprenticeable trades. The next thing you know, we have people referring to a diverse set of industries with a diverse group of occupations and influenced by a diverse set of economic and seasonal factors as a single problem with a single set of solutions.

With all the individuals and trades and industries represented in the so-called apprenticeship system, I have never understood how anyone who has made a pretext at studying the so-called system could possibly present an overview without resorting to broad generalities. Yet, after hearing the learned paper delivered this morning by Mr. Farber of my research division, you know very well that it can be done, and it can be done with a lot of assurance and a good deal of merit.

I do not mean to sound like the proverbial voice crying in the wilderness because I have a deep and abiding sense of urgency when it comes to research in our training programs. There is a tremendous need in this country to find out who is being trained, who is doing the training, why it is being done, and how it is being done, and what are the criteria that establish the trainee as a journeyman.

We had that in mind last year when we asked Purdue University to conduct a research study of apprenticeship. I feel hesitant to talk about any of the details since you had the benefit of listening to my friend Dr. Drew speak on this subject. I might point out, however, that

this study of apprenticeship is sorely needed. The basic facts surrounding apprenticeship have been for too long a matter of individual experiences, conjecture, and periscope observations. It should be quite clear from the remarks of Dr. Drew that Purdue is not investigating apprenticeship. The research teams are in the process of establishing two models of industry-wide programs and comparing two other programs against the models. Practices and traditions, theories and concepts, instruction and skill levels will be some of the areas that will be delineated.

Frankly, we do not know what the two-year research project will finally produce. We can only surmise from the progress reports to date that the study should be extremely useful to management, labor, government, and the future of apprenticeship. We are excited about this research. The Bureau of Apprenticeship and Training was created to promote and foster apprenticeship nearly 30 years ago, and we feel that, for the first time, there will be something tangible to work with once Purdue produces its report.

At no other time in recent history has there been such widespread interest in problems of apprenticeship. This very conference is indicative of this interest. Much of the public discussion of apprenticeship proceeds on the basis of one overriding assumption: apprenticeship is a matter which affects the public interest. Until recently apprenticeship was regarded as a private matter, privately initiated and privately conducted. It was either the joint concern of labor and management in a collective bargaining relationship, or the sole prerogative of management. Apprenticeship is suddenly being evaluated in terms of a new set of standards which require properly emphasized public purposes rather than the needs of particular firms or industries, or the joint needs of particular unions or particular employers.

The Senate Subcommittee on Employment and Manpower has held a series of hearings to find incentives for a consistent and high level of training in industry. The fact that apprenticeship is subject to the economic pressures of booms and recessions, with the effects felt four years later, has created growing concern. We are currently experiencing a shortage of skills because four years ago the economy was not robust enough to accept the thousands of apprentices which would have been journeymen today. Obviously, the absence of any special incentives to hire extra apprentices during a recession can play hob in an expanding economy such as ours today.

While it was not conceived as an outright incentive for apprenticeship, there is little doubt that the Manpower Development and Training Act of 1962 has been just that through its on-the-job training provisions. Since the OJT program began in 1963, about 20,000 of the trainees have been scheduled for apprentice-entry projects through joint committees and management alone. Trade and industrial associations are developing national and regional OJT programs for the purpose of

creating a pool of skilled workmen to meet current and expected demands in particular industries.

A striking example of apprentice-entry training on a national scale is the OJT project signed with Chrysler Corporation for 1, 000 automotive mechanics and body repairmen among individual dealers. Another is the apprentice-entry projects conducted by city chapters of the National Tool, Die and Precision Machining Association for 3, 000 tool and die makers. Establishing such apprenticeship programs, where few or none had previously existed, helps small employers who otherwise could not afford them.

Experience with the OJT program is still somewhat limited, but it has already demonstrated the effectiveness of government aid in increasing on-the-job training opportunities in the field of apprenticeship. The Secretary of Labor has suggested that OJT, under the Manpower Development and Training Act, could well serve as a training incentive for private industry until such time as a workable tax incentive or other plans can be worked out. The federal interest in apprenticeship, however, cannot be confined solely to solution of long-term problems. There is also the problem of the here and now.

While opportunities in the traditionally apprenticeable trades are relatively limited, this does not preclude the federal interest from promoting apprenticeship programs in emerging occupations where clearly defined methods of training have not yet been developed. Public interest in the past, as implied in the Fitzgerald Act, encouraged labor and management initially to develop apprenticeship programs. Perhaps an active manpower policy on the part of the federal government requires a thorough-going review of this policy, and perhaps some recharting of direction and policy. It is entirely possible that the subsidiary and residual role played by federal agencies is no longer appropriate in occupations and industries hitherto untouched by apprenticeship.

Section IV

Winn Newman, Chairman

INCREASING APPRENTICESHIP OPPORTUNITIES THROUGH PRE-EMPLOYMENT TRAINING

JOHN S. McCAULEY
U.S. DEPARTMENT OF LABOR

The development of pre-employment training in apprenticeable occupations is a promising method of expanding the volume and improving the quality of apprenticeship in the United States. This approach makes it more attractive for an employer to hire an apprentice. In addition, this initial training enables young people to make more intelligent career choices and helps to provide a good foundation for the skills and knowledge they need to acquire during apprenticeship. Furthermore, pre-employment training is an effective method for increasing the participation of minority group members in apprenticeship programs. This paper describes some of the different types of pre-employment programs, considers the advantages of the pre-employment approach, and describes the use of the Manpower Development and Training Act to help finance such arrangements. The paper also suggests some research that needs to be conducted in this field.

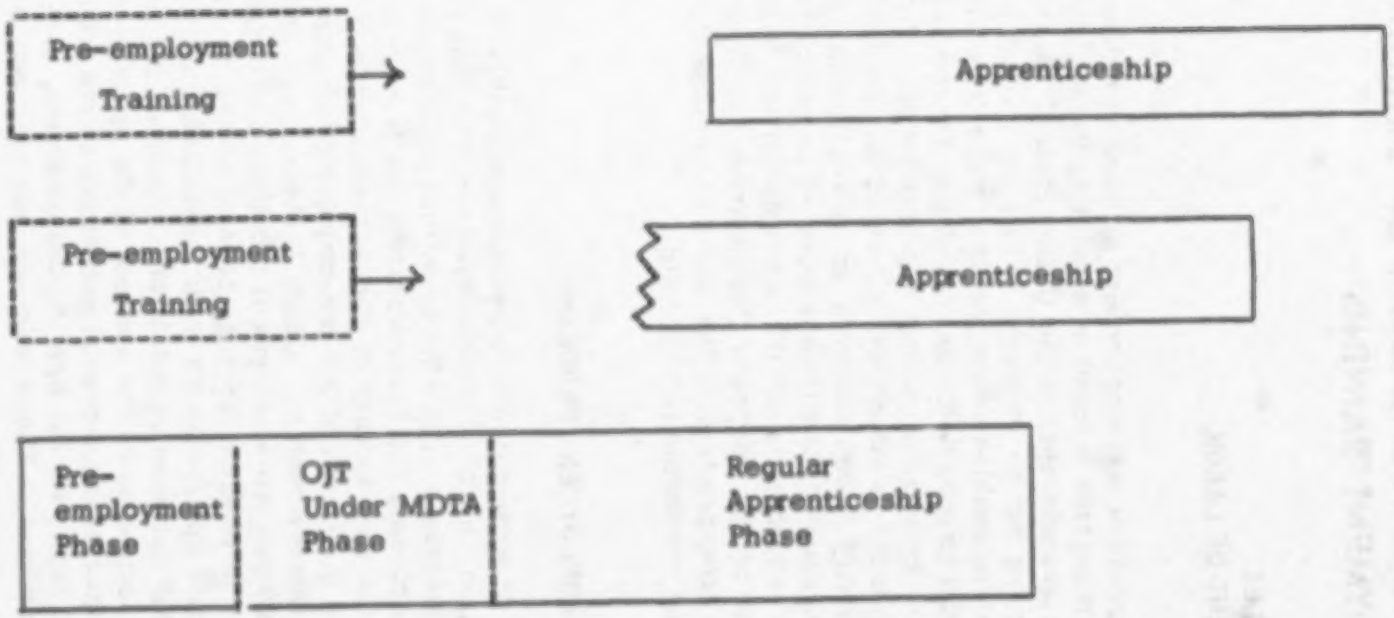
TYPES OF PRE-EMPLOYMENT PROGRAMS

Many types of arrangements, varying considerably in regard to content and duration, have been developed for providing pre-employment training for apprentices. The most important differences, however, are in regard to how closely the sponsorship of the pre-employment training is related to the sponsorship of the apprenticeship program, and the extent to which graduates of the pre-employment training are expected to move into apprenticeship. Chart 1 shows three different types of relationship between pre-employment programs and apprenticeship.

The first type of program provides several weeks of classroom training to help prepare applicants for their apprentice training and get them ready to pass the entrance examination. However, the pre-employment training is not sponsored by the sponsor of the apprenticeship program. Although graduates of the pre-employment phase are considered, along with other applicants, for the apprenticeship phase, they will not necessarily be admitted. Those who are admitted may not receive any

CHART 1

Relation of Various Types of Pre-Employment
Programs to Apprenticeship Programs



credit towards the term of apprenticeship for having completed the pre-employment program. Moreover, several weeks may elapse between their completing the pre-employment phase and their entering apprenticeship.

The second example shows a program where there has been close collaboration between sponsors of the apprenticeship program and school officials conducting the pre-employment training. It is likely that most persons graduating from the pre-employment program and entering apprenticeship will receive some credit on the term of apprenticeship. Furthermore, little time will be lost by the trainee between the pre-employment phase and the formal apprenticeship.

The final example shows a unified program in which it is expected that all participants will complete the entire program and move without interruption from one phase to the next. The example shown also incorporates a period of on-the-job training during which the employer is reimbursed under MDTA for part of the expense of providing instruction on the job. Such a program is currently being sponsored in Washington, D. C., by the Bricklaying Joint Apprenticeship Committee representing Local 4 of the Bricklayers, Masons, and Plasterers International Union and bricklaying contractors.

ADVANTAGES OF THE PRE-EMPLOYMENT APPROACH

Encourages Employers to Hire Apprentices

A major aspect of the problem of expanding apprenticeship opportunities is the employer who is reluctant to hire a beginning apprentice because of the time and trouble involved in breaking him in. "Send me a second-year apprentice, and I will be glad to hire him" he will say. However, a second-year apprentice will not generally be available to such an employer, so he will end up not employing any apprentices. Pre-employment programs would help assure the potential employer that even the beginning apprentice would measure up to a certain standard of competence, thereby encouraging more employers to participate in the national apprenticeship program.

Provides Opportunity for Vocational Exploration

Many young people who are interested in a skilled trade do not have a very accurate picture of what is involved. Much of the turnover that occurs during the early weeks of apprenticeship programs is attributable to the fact that young people are becoming aware that they are not interested in, or do not like, certain trades. Providing occupational information and some opportunity for vocational exploration in a pre-employment course, prior to employment as an apprentice, will help

young people to make a more intelligent choice. This approach will also relieve employers of considerable turnover on the job.

Provides Foundation for Acquiring Specific Skills on the Job

Technological change has increased the skill and knowledge required in many of the apprenticeable trades. Young people interested in careers in industry should generally have a good basic education, which includes some knowledge of mathematics, physics, and chemistry. Unfortunately, many applicants for apprentice training do not possess such a background. A pre-employment course would provide an opportunity to acquire the educational background now needed to master most of the skilled trades.

Although a general course designed to prepare for apprenticeship in any field would be helpful, there are several advantages in providing a more specific course. If all the trainees plan to enter the same field, school officials can work with the sponsor of the apprenticeship program in developing the content of the pre-employment course. In addition to making the instruction more realistic, this approach will help to strengthen the commitment on the part of those sponsoring the apprenticeship program to hire the trainees. Furthermore, a course which concentrates on a single occupation can weave in materials from that field. Even mathematics problems, for example, can be structured to deal with situations frequently encountered in the occupation. It may also be feasible to recruit an instructor who is an experienced craftsman in the field for which the trainees are preparing to enter.

Provides Opportunity for Expanding Participation of Minority Group Members

Although there has been definite progress in making apprenticeship opportunities available to Negroes, in some large cities a very low proportion of all apprentices are Negro, and there are trades in which there are literally no Negro apprentices. The Labor Department's Bureau of Apprenticeship and Training has been working with Joint Apprenticeship Committees and other program sponsors to establish objective standards for the selection of apprentices. However, relatively few Negroes have taken examinations for admittance to apprenticeship. Furthermore, at least in some cities, only a few of the Negroes taking the examination score high enough to be selected. Oral examinations and credit for work experience which Negro applicants ordinarily do not possess have been additional barriers. The pre-employment program would greatly enhance the participant's ability to score high on the examination.

Many minority group members who are interested in careers in apprenticeable occupations lack the educational foundation required for the more demanding apprenticeable trades. Still others have adequate

education, but lack confidence and would both appreciate and benefit from an opportunity to strengthen their qualifications before taking an examination for admittance to apprenticeship.

MDTA PROGRAMS

Under the Manpower Development and Training Act of 1962, funds may be provided for pre-employment training for prospective apprentices. In addition to paying the salaries of instructors and other institutional costs, training allowances may be provided for trainees receiving classroom instruction. However, only limited use has been made of this resource throughout the country.

Only 90 institutional pre-apprenticeship projects were approved under MDTA from the beginning of the program through June 30, 1966. Most of these institutional projects were established in North Carolina in auto repair, bricklaying, and carpentry. In developing these programs, there was usually only an informal understanding that the trainees would move into formal apprenticeship programs upon completion of the courses.

To better prepare candidates for apprenticeship, pre-employment programs have been developed that combine a school course with training on the job. Such "coupled" programs usually reimburse the sponsor of the on-the-job phase for the expense of hiring a training coordinator and other instructional costs.

The Labor Department has already had favorable experience with such programs. A contract with the National Tool and Die Association has made pre-apprenticeship training available to over 1,300 trainees since its inception. Of this number, 97.5 percent entered the apprenticeship section of the program. In a typical project, in Cleveland, 40 out of 42 trainees entered apprenticeship after 12 weeks of pre-apprenticeship training.

Another example of a coupled MDTA program is the bricklayer program in the District of Columbia, which is sponsored by the Bricklayers Joint Apprenticeship Committee. The trainees receive classroom instruction in mathematics and blueprint reading, and they also spend eight weeks in a school shop receiving instruction and training in mixing mortar and laying brick. Most of the trainees are eligible to receive a training allowance during this period. At the end of the eight-week period, the trainees spend 18 weeks in on-the-job training at various construction sites in the Greater Washington area. Upon completion of the OJT phase they become apprentice bricklayers.

In describing his participation in one of the bricklayer graduation ceremonies, Secretary Wirtz said:

> There were 39 graduates of the twelve-week course; 12 white, and 27 Negro boys. We dedicated the brick wall they had built around the school parking lot—but in a much larger sense what we marked was the tearing down of a wall of racial prejudice and disadvantage. This week, all 39 boys started on-the-job training courses with Washington building contractors, at $2.50 an hour. When they finish those courses they will take their places as regular apprentices.

Under the provisions of a national contract with the Structural Clay Products Institute, MDTA funds are being used to develop similar programs in bricklaying for a thousand trainees throughout the country.

Another example of the Labor Department's experience in increasing apprenticeship opportunities for minority groups is a program currently in operation in Chicago. This is part of a larger program, entitled the Chicago Plan, which is based upon a person-to-person approach to seeking out the poor, helping them to become more employable, and finding jobs for them. The special program seeks to insure a qualified stream of minority group applicants to fill the apprenticeship opportunities which are currently opening up for minority group youth. The Chicago Urban League has entered into a cooperative agreement with the Illinois State Employment Service to provide special services to youth who are members of minority groups which will enable them to be admitted to and complete apprenticeship programs in all building trades.

In the past, members of minority groups have been aware of the fact that few, if any, apprenticeship opportunities were open to them. As a result, the number of applicants among minority group youth has also been quite limited. Few had even approached the Apprenticeship Information Center that was established in Chicago by the Illinois State Employment Service, in cooperation with labor and management and in close collaboration with the Bureau of Apprenticeship and Training. In view of this, a campaign to promote (for the minority community) the concept of apprenticeship as a career training device, an alternative to college, and a rewarding lifetime career constitutes an important Urban League function under the agreement. As part of its recruitment campaign, the League initiates contacts and maintains relationships with a wide variety of groups and organizations who come in contact with potential applicants. The League refers all youth who indicate an interest in apprenticeship to the Apprenticeship Information Center.

Concurrent with the recruitment phase of the program, there is also the provision of Urban League coaching and supportive services to applicants to insure their successful entrance into apprenticeship. Each coach works with a small group of applicants to make certain that all necessary services are provided to the applicants. These include family counseling, weekly home visitations, program interpretation, guidance and career counseling, consumer and credit education, group

counseling sessions, field trips, cultural enrichment, and, where required, physical examinations. Liaison and coordination is also maintained with school instructors and other related officials who are involved in special programs developed to assist those youth who need special remedial work or other assistance in passing the actual examinations. These latter programs were developed in collaboration with the Bureau of Apprenticeship and Training and the Chicago Public Schools. In addition, since frequently there are long waiting periods between selection for and entry into apprenticeship training, the League works closely with the Employment Service to provide youth with needed jobs during the waiting period. Whenever possible, such jobs are related to the occupation for which the youth will be trained.

In selecting youth for the program, priority is given to those applicants who have already registered and qualified at the Apprenticeship Information Center. Subsequent selection is made, in cooperation with the Employment Service, from among those youth who have been referred to the Apprenticeship Information Center, whether by the League or from other sources.

The immediate goal of the Chicago program is to provide special help to at least 100 minority group youth who are interested in apprenticeship. Although several young men who participated in this program have recently been admitted to apprenticeship in the Chicago area, it is too soon to judge the effectiveness of this program.

RESEARCH NEEDS

Some of the questions concerning pre-employment training for apprentices that need to be studied are outlined below:

(1) How many persons should be provided pre-employment training each year in the various apprenticeable occupations? Such data are needed on a community and a state basis.

(2) What should be the duration of pre-employment training in various occupations? Although it is important that the pre-employment classes be long enough to provide a good foundation, so that the apprentice can give a good account of himself from the very first day that he is on the job, they should not include training that can best be acquired on the job. Extending the pre-employment program beyond this point increases the likelihood that it will be regarded as a substitute for apprenticeship, rather than a preparation for apprenticeship.

(3) Should all trainees who receive pre-employment training be expected to move into formal apprenticeship programs? At what point in the program should the trainees become registered apprentices? How much credit on the term of an apprenticeship should be given for the pre-apprenticeship period?

(4) For what portion of the on-the-job phase of a coupled project should employers be given financial help?

(5) How can supportive services best be provided to minority group members who may need special help in entering and completing an apprenticeship?

(6) What approach should be taken in communities where sponsors of apprenticeship programs are reluctant to participate in the development of pre-employment programs?

Research studies on these matters will help shed light on many different aspects of manpower problems in our modern society. The findings of such studies would also provide guidance to the officials of labor, management, education, and government organizations who are working to extend and improve apprenticeship in the United States.

DISCUSSION

PAUL V. JOHNSON
PURDUE UNIVERSITY

In the course of the Purdue research on apprenticeship training in the United States, I have received comments on MDTA work in the field of pre-employment training from several persons. Favorable reports have been received concerning the pre-apprenticeship training work being carried out in cooperation with the National Tool, Die, and Precision Machining Association, in particular. Mr. McCauley's interesting paper has presented an integrated report on these activities and placed them in clearer perspective. Many members of the audience no doubt share my reaction.

It would be inappropriate for me to present a typical critique of the preceding paper, since I am very much in sympathy with the work reported. Rather, I should like both to expand a bit on one comment in the paper about additional research needs and to augment that list by at least one additional point.

Mr. McCauley has pointed out that more information should be obtained on the extent to which pre-employment training is needed in apprenticeable occupations throughout the country. In the short run, it is obvious that many potential apprentices need training which will enable them to successfully meet the selection hurdles currently used in apprenticeship training systems. What is less obvious is the validity of many existing selection devices.

My experience in this field has produced little objective evidence as to the actual validity of the various screening and selection devices being used in the apprenticeable trades. To establish the validity of any specific selection device, applicants should be accepted over some period of time on bases other than the device in question. At a later date, those persons previously selected should be evaluated against some criterion such as successful completion of the apprenticeship program. Only if the predictor under study differentiates at some predetermined statistical level of significance between those successfully completing and those not successfully completing their apprenticeship—or against some other criterion measure—should it become a part of the selection system. While many devices in general use for the selection of apprentices from applicants *may* be valid, my inquiries have failed

to produce much evidence that any such systematic procedures have *demonstrated* their validity.

These comments are not, certainly, a plea for the elimination of properly validated selection devices and procedures. In the long run, however, it is important that pre-employment training be directed toward raising the competence of potential apprentices in those areas relevant to success as apprentices and journeymen, not to the passing of "artificial" hurdles. The danger of this latter direction is probably most serious in those types of arrangements described by Mr. McCauley in which there is a time gap between pre-employment training and the final acceptance of trainees into apprenticeship programs. There does not seem to me to be too much enthusiasm for appropriately conducted validation procedures, yet I feel research along these lines is greatly needed.

Underlying several of the other research areas suggested by Mr. McCauley is, I believe, a body of even more fundamental research which is greatly needed. Far too little is known about differences in aptitudes and motivation among Americans of various racial and ethnic extractions. Research concerning such possible differences is a "hot potato" in the present climate, yet better knowledge of such differences, or their absence, is essential to the long-run improvement of the social and economic position of minority groups.

The only recent study of this type which has come to my attention is one completed about a year ago by Joseph Champagne on "The Attitudes and Motivation of Southern Underprivileged Workers."[1] This study involved the measurement of 16 factors of job motivation and various attitudes of 587 trainees in a federally supported job retraining program. Analyses were made on 63 subgroups based on age, sex, race, length of time in retraining, and economic environment. A discussion of the interesting similarities and differences found in that investigation would take me beyond my allotted time. Certain problems involved in such studies are worthy of mention here, however.

Because of the sensitivity of the area involved in the study, apparently neither federal nor state funds could be secured to finance the research. An employer organization, the South Carolina Committee for Technical Education, ultimately financed the study.

Since the sample was drawn from a population of "underprivileged workers," applicability of the findings to other populations is presently uncertain. Believing that norms on the two basic measuring instruments used in that research for industrial workers would be most useful, I encouraged a graduate student to attempt to administer these instruments in an industrial setting as the basis of a Master's thesis in industrial

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1. Joseph E. Champagne, *The Attitudes and Motivations of Southern Underprivileged Workers, Research Report Number 1,* South Carolina Committee for Technical Education (Columbia, South Carolina, 1966).

relations. Using some of my own as well as my coworkers' industrial contacts in the Midwest, after six months we were forced to abandon the project, because it was impossible to obtain cooperation of any firm with a sufficiently large and diversified labor force to produce meaningful data.

Both of the research subjects which I have mentioned in these brief remarks represent problem areas. I see no easy solution to the problems of funding and obtaining cooperation for such research. That the goal of substantially improving the position of minority groups is a long-run problem has been recognized in comments by a number of the conferees present at these sessions. Ultimately, in my judgment, some breakthrough is necessary in such areas if we are to progress in solving some of our persistent manpower problems.

With regard to on-going research, results of some of the studies discussed at this conference should be mutually beneficial. There is often useful "fallout" from a research project, quite apart from its narrower goals. The research under way at Purdue, discussed yesterday by Dr. Drew, will hopefully contribute to the improvement of pre-employment training.

Working in a large university, I am constantly impressed with the variety of on-going research on my own campus of which I have been unaware—even though it is related to some of my own research interests. My colleagues in other departments report similar experiences. When one considers the scope of national research in a multitude of disciplines, the problems of communications are further magnified. For me, at least, the opportunity for interaction with others engaged in research related to apprenticeship has been both helpful and encouraging.

NATIONAL AND STATE APPRENTICESHIP, 1960–1966: UP TO DATE OR OUT OF DATE?

FELICIAN F. FOLTMAN
CORNELL UNIVERSITY

Powerful forces like the Cold War, massive technological changes, rapid population and work force growth have helped to engender reappraisals, often agonizing, of many of our social welfare institutions during the past decade. Singled out for intensive and extensive reappraisal during this time have been our educational and training systems; the sharpest attacks have been aimed at vocational education, but almost as massive an attack has been mounted against the house of apprenticeship. Criticisms of our apprenticeship system take many forms: some complain that it has condoned if not actually encouraged discriminatory practices in the selection and employment of persons in skilled occupations; others assert that the numbers trained by apprenticeship training programs do not properly match the demands of our market places; while others argue that such systems concentrate too exclusively on employer or trade union interests, and are, as a result, unsympathetic to the demands of youth—especially of disadvantaged youth. Inevitably, there has been some response to all this publicly expressed concern; whether or to what degree this response is appropriate, timely, or sufficient in terms of our public interest will be explored in this paper.

In order to form a valid judgment of the merit of any organized human activity, one must possess objective evidence pertaining to the purposes of the activity, information concerning the degree of progress achieved in the pursuit of stated objectives, and data related to the costs incurred. With these data and with some understanding of the appropriate measurement instruments, there is at least a high probability that valid assessments of a system as complicated as apprenticeship might be developed. But it is precisely with respect to these fundamentals that serious attempts to evaluate apprenticeship face serious difficulties. Consider the matter of the objectives of apprenticeship as it currently exists. It is many things to many people; depending on a particular conception, stated or implied, objectives will vary. To many trade unionists it combines an aura of mystic rite with a practical method for controlling how much an occupation is worth, how persons enter into it,

and who is to serve in the occupation. To the employer it is a training system which, because it combines actual in-the-shop experience with related theory, constitutes an oftentimes excellent training system for producing not only qualified skilled workers, but even more important for many employers, for producing truly competent lower and middle level supervisors. To the apprentice himself, apprenticeship remains primarily a male-oriented institution in the U.S. (although traditions in Europe include female apprentices to a considerable degree); this participation may mean deferred income plus an opportunity for secure income and employment. To the active manpower policy maker it constitutes one of the training systems considered to be inherently necessary to help match the supply of workers with the demand for workers in an ever increasingly complicated industrialized society. To the official charged with implementing our federal or state policies on apprenticeship, the program may offer modest opportunities for dispensing patronage, while to the representative engaged in promotion and development in the field, it may mean simply a sinecure. Considering these different orientations, it becomes clear that to properly evaluate this complicated activity requires substantial knowledge of the many faces that it wears. But an examination of every facet of apprenticeship would require much more detail and analysis than can be accommodated in this paper. Instead, this paper focuses on apprenticeship policy and program in the State of New York which, according to federal BAT officials, is reputed to have a truly viable operation that complements federal policy and program.

Even more specifically, this paper focuses on policies and programs related to the promotion and development of apprenticeship training in New York state during the period from 1960 up to the present. There are several sound reasons for selecting this particular era for intensive study. For one thing, it was during the 1960's that the United States evolved an Active Manpower Policy—a concept that placed a first priority on education, training, and retraining as a means to balance the supply of human resources with the demands of our labor markets. As indicated, it was during this period that serious examination of every facet of education, training, guidance, and placement became quite commonplace. Another reason for selecting this time period and the state of New York is that this writer was privileged to have conducted a detailed study of state policy and program in 1959.[1] Thus, it is possible to compare the recommendations made in 1960 with the intervening reality and arrive at some judgment concerning progress toward the attainment of stated goals. And, finally, this era and this state are

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1. F. F. Foltman (Findings and Recommendations with respect to New York State Policy and Program for Skilled Manpower Development, 1959). Available from NYSSILR, Ithaca, N.Y.

selected for study because of the policies that have emerged with respect to equal opportunity in the selection and use of apprentices.

The research method used in developing this paper consisted of a systematic analysis of all the documents and reports produced by the New York State Bureau of Apprenticeship Training and related state organizations from 1960 to the present. Responsible state officials were also interviewed at length. Not unimportant is the fact that all the state officials who are currently involved in directing New York's apprenticeship training development programs were completely candid and more than willing to share their every perception of both the success and failure of their programs.

I shall argue that New York state's public policy for the promotion and development of apprenticeship (and this could very easily be extended to our federal policy and program on apprenticeship) is still oriented to the conventional wisdom of the past. The state has, on the other hand, responded to the pressures to prevent discrimination in selecting apprenticeships not only by passing a law, which others have accomplished, but also by hammering out rather precise and objective criteria for the selection of apprentices and, perhaps even more importantly, procedures for insuring compliance with policy. I shall alsc argue that the development and implementation of our active manpower policy has served to consign even further into limbo, traditional governmental approaches to promoting and developing apprenticeship training. So much for orientation—now for some facts.

DEVELOPMENTS IN U.S. APPRENTICESHIP AND TRAINING, 1960-66

In reviewing the "state of the art" of apprenticeship, it is well to remember that national apprenticeship policy, as expressed in the Fitzgerald Act of 1937, seeks to encourage employers and labor unions to set up apprenticeship programs. The policy is completely voluntary and hortatory.[2] In contrast to some European apprentice programs that do provide state control, the U. S. policy simply encourages the use of apprentice training systems; but, in addition, our policy does seek to define what apprenticeship is, and what standards should be followed in conducting programs.

Ultimately, all governmental efforts to encourage the initiation and maintenance of apprentice training are measured against the hard criterion of the numbers of apprentices in training or the numbers who have completed apprentice training. By this criterion, the efforts on the part of the government to stimulate the development of apprentices do not

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2. F. F. Foltman, "Public Policy in Apprenticeship Training and Skill Development," *The Role of Apprenticeship in Manpower Development: U.S. & Western Europe*, Committee on Labor and Public Welfare, U.S. Senate (Washington: GPO, 1964), p. 1119.

seem to have met with spectacular success over the last several decades. Table 1 shows a decline of about 25 percent in the number of apprentices in training from 1950 to 1960 (many World War II veterans were still in training in 1950), but after a steady decline, the nadir was reached in 1962.[3] Since 1962 there has been slow but steady growth; whether this growth is truly adequate to meet the nation's skilled manpower needs is still somewhat debatable.

Problems and Challenges

Some of the apprentice training problems have already been alluded to; others will now be made explicit. They include the following (on which there would be much if not complete agreement as to merit):

(1) Apprentices are not always selected on the basis of their potential ability to be successful in an occupation, but instead, are selected in terms of nepotism or other discriminatory bases. More on this later.

(2) Inadequate statistics on apprenticeship result in a confusing numbers game, where no one is quite sure as to who is or who is not being trained, or what real needs exist.

(3) Apprenticeship programs are just not producing sufficient skilled craftsmen to meet demands for such workers. The situation is especially severe now, in the summer of 1966.

(4) Skilled occupations have been downgraded in status within recent years, as a result of which fewer persons are attracted to such occupations. Related to this is the point, argued by some, that the traditional pay differential between unskilled and skilled has been eroded; there is no real incentive to youth to train for such occupations.

(5) Apprenticeship is playing a lesser role in our hierarchy of training systems, because newer skill needs are intellectual rather than manual. In this situation, schools provide a more efficient training approach than that found in on-the-job training.

(6) Professional and technical occupations are steadily increasing in the labor force, while the number of skilled craftsmen is relatively static. Very properly, therefore, persons are being guided into "growth" occupations rather than into skilled occupations.

(7) As a system of training, apprenticeship has resisted change; it has not been very innovative, but has instead insisted in maintaining rigid and inflexible time and other requirements.

(8) Apart from statistical data collecting, apprenticeship has not engaged in any imaginative research program. There appears to be

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3. For a clear exposition of many ramifications of these questions, see George Strauss, "Apprenticeship: An Evaluation of the Need," *Employment Policy and the Labor Market* (Berkeley: University of California Press, 1965).

TABLE 1.[a]

Totals for All Trades, Trends 1941-65
Registered Apprentices in Training, New Registrations,
Completions and Cancellations
(Adjusted to account for reporting revisions)

	In training on January 1	New registrations[b]	Completions	Cancellations[c]	In training on December 31
1950	230,823	60,186	38,533	49,747	202,729
1951	202,729	63,881	38,754	56,845	171,011
1952[d]	172,477	62,842	33,098	43,689	158,532
1953	158,532	73,620	28,561	43,333	160,258
1954	160,258	58,939	27,383	33,139	158,675
1955	158,675	67,265	24,795	26,423	174,722
1956	174,722	74,062	27,231	33,416	188,137
1957[d]	189,684	59,638	30,356	33,275	185,691
1958	185,691	49,569	30,647	26,918	177,695
1959	177,695	66,230	37,375	40,545	166,005
1960[d]	172,161	54,100	31,727	33,406	161,128
1961	161,128	49,482	28,547	26,414	155,649
1962	155,649	55,590	25,918	26,434	158,887
1963	158,887	57,204	26,029	26,744	163,318
1964	163,318	59,960	25,744	27,001	170,533
1965	170,533	68,507	24,917	30,168	183,955
1966	183,955				

a. Shortened version of table prepared by U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, Division of Research and Cooperating State Apprenticeship Agencies.

b. Includes reinstatements.

c. ***Cancellations*** are not synonymous with "dropouts," since they include layoffs, discharges, out-of-state transfers, upgrading within certain trades, and suspensions for military service, as well as voluntary "quits."

d. Major revisions in reporting system effected this year.

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little if any "fundamental" research under way, with the exception of the large-scale research program (funded by OMAT) now under way at Purdue University ("A Study of the Need for Educational and Training Adjustments in Apprentice Programs for Selected Craft Occupations").

(9) The primary task of federal and state bureaus of apprentice training—that of promotion and encouragement—has been performed

quite routinely, with something less than adequate financial and idea resources.

(10) By setting the minimum age for entry into apprenticeship at 18—thus in effect requiring a high school education—unnecessary rigidities are created in program requirements.

(11) State and federal BAT field operations perform similar functions, but are often competitive rather than cooperative. Overlapping jurisdiction and competition between federal and state BAT representatives constitute the most severe problem; at a lesser but still significant level, there is lack of coordination among multifarious agencies who have some interest in, or jurisdiction over, training of apprentices.

(12) Apprenticeship has been reserved exclusively for "blue collar" workers, thus excluding many service and white collar occupations.

(13) Because apprenticeship is still largely controlled by organized labor, it is oriented to their interests of job and wage control, rather than to training as a process or to individual worker attainment. By the same token, public school educators are usually not very influential in determining what apprenticeship is or should be. As a matter of fact, "Maryland's apprenticeship act is administered by the State department of education rather than of labor, and consequently is not recognized by the Federal Committee on Apprenticeship."[4]

(14) Some still argue (usually in terms of evidence less than definite) that the reason there are few apprentices in training is because apprentice ratios are deliberately set to prevent too many persons from acquiring skilled craftsmen status.

(15) There is a "direct association between changes in the completion rates of apprentices and unemployment, as well as an inverse relationship between the number of new apprentices and the level of employment. Thus the post-war recessions which have plagued the economy bear some responsibility for the failure of the apprenticeship system to grow significantly."[5]

(16) Industries engaged in production for national defense are reimbursed for training under the National Defense Act. These industries should be required to use some of their reimbursable training funds for apprentice training.

(17) Although we have experimented with financial aid for training under the provisions of the GI Bill and under MDTA, we have not

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4. Martha F. Riche, "Public Policies and Programs," *Monthly Labor Review* (February 1964), p. 144.

5. U.S. Department of Labor, *Apprenticeship and Economic Change*, Tech. Report #3, p. 21. U.S. Department of Labor, Staff Paper (unpublished), "The Federal Interest in Apprenticeship," July 1966.

chosen to provide government financial incentives for the training of apprentices. Most European countries, on the other hand, seem to find such subsidies useful aspects of national manpower policy.

Many recent studies have referred to apprenticeship as a failure—as something tending to be moribund, as a national crisis, or, if not exactly a catastrophe, suggesting that many improvements are possible. This inventory, even if it is not completely exhaustive, does illuminate the diversity of view and the magnitude of required changes.

Response: Routine and Innovative

What have been the responses to this lengthy catalogue of problems and criticisms? To what extent are the interested parties aware of these views, and to what extent are they attempting constructive action as a response? Regarding both questions, the answer (happily) seems to be "yes"—there is awareness of problems and some tentative responses. Exactly how innovative this response has been, or whether it represents merely bureaucratic bungling, is still too early to tell. However, what is clear in the following summary of innovations and responses is that the leadership for developing creative solutions has not come from the established organizations, but has instead come from other quarters. Thus, for example, MDTA, which approved training for 69,000 in an OJT context in 1965, came into being as a direct response to the fact that, while the nation had relatively high unemployment in the early 1960's, it also had skilled job vacancies which were going begging. Apprenticeship training could not or would not adapt to these facts, but a new training activity produced the desired result. Indeed, MDTA seems to have executed a successful end run around apprenticeship, by training unemployed persons in all occupations, but including, very specifically, skilled occupations.

The formal record of governmental agencies is submitted annually to various congressional committees; particularly appropriate for our purposes is the record of achievement or failure that is unfolded annually before the Committee on Appropriations. And incidental but pertinent to this discussion is the fact that the chairman of the powerful Congressional Sub-Committee on Appropriations (during 1960–66) was a gentleman who was not uninterested in apprenticeship. This subcommittee appeared to be most sympathetic to the concept of apprenticeship, but perhaps this very sympathy was the reason there seems to be so little critical inquiry into the workings of our national apprenticeship program. The climate at these hearings is epitomized in the closing remark of the chairman in 1965, when he said to the administration of the national apprenticeship program, "As one bricklayer to an-

other, Mr. Murphy, I think you are doing a good job. Keep up the good work."[6]

As noted, there were 172,161 apprentices in training in 1960 and 183,955 in 1966. If one of the objectives of the national apprenticeship program is to expand the total number of apprentices in training, it would appear the critics are right in suggesting that this increase is quite modest. Perhaps, one might argue, insufficient human and other resources were allocated to the task of encouraging growth and maintenance of formal apprenticeship programs. At least in relative terms, this does not appear to be the case. On the other hand, it has been argued that promotional efforts do not correlate positively with the number of apprentices in training, but that employment levels do. To accept this view would suggest that government might better engage in research or experimentation, rather than in merchandising apprenticeship training.

It would appear from the annual presentations made by the federal BAT to the appropriations committees that a number of innovations have been instituted or suggested in an attempt to (1) expand the volume of apprenticeship, or (2) insure equality of opportunity for those seeking to gain admission into this training.[7] Some of these new ideas included development of pre-apprenticeship training programs; development of apprenticeship information centers; organization of training funds and the appointment of training coordinators; building up training materials libraries; conducting two nationwide surveys of apprenticeship and other industrial training; and, perhaps their greatest single accomplishment: development of on-the-job training programs under provisions of the Manpower Development and Training Act. This last development has served to round out the nation's training systems and its "Active Manpower Policy;" but its import, for purposes of this paper, was to act as a spur and a goad to apprentice training and to the government officials associated with such training.

Truly enormous changes have been wrought in our educational and training systems during the past six years—a revolution, many have labeled it. Yet throughout this period, our national apprenticeship training activity remained essentially what it has been for many years. To determine if this pessimistic appraisal is valid, we now turn for more evidence to events at the state level.

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6. U.S. Hearings—Subcommittee of the Commission on Appropriations, House of Representatives, Department of Labor and Health, Education and Welfare, appropriations for 1966 (Washington: GPO, 1965), p. 357.

7. These are the dual objectives of our national apprenticeship program according to Assistant Manpower Administrator, David E. Christian (See David E. Christian, "The National Apprenticeship Program: Unfinished Business," *Monthly Labor Review*, June 1964, p. 625).

APPRENTICESHIP POLICY AND PROGRAMS AT THE STATE LEVEL: THE CASE OF NEW YORK STATE

New York is one of 30 states in the nation which, at the behest of federal policy as expressed in the National Apprenticeship Act, enacted legislation in 1941 to "develop sound apprenticeship standards and to encourage industry and labor to institute training programs." The basic policy remains the same today, although both legislative and administrative changes have been made since the passage of the basic law. Certain of these changes are selected for intensive analysis because they illustrate both the promise of our public policy on apprenticeship, as well as the considerable difficulties that are involved.

Evaluation of the New York State Apprenticeship Policy and Program, 1959

Since I conducted an investigation of New York state apprenticeship policy and program through the summer and fall of 1959, I will begin by enumerating major findings and recommendations from that study, in the hope that these will constitute a bench mark for evaluation.[8] The substantive recommendations in the report related to the following questions, policies, or operations: (1) Does the state have a legitimate role to play in promoting apprenticeship, or should it withdraw from this activity? (2) What are the true attitudes of employers and trade unionists towards governmentally sponsored apprentice training? Other questions concerned (3) required legislative changes; (4) administrative and operational changes; (5) related instruction; and (6) federal-state relations.

Why should a state like New York invest manpower and financial resources to support apprenticeship? Or, to put it in even blunter terms, what would happen if the state were to withdraw completely its support of such training? Many employers would not even notice that the program was dropped. Some money might be saved, but apprenticeship in one form or another would continue even if the state were to withdraw. More positively, however, the report suggested that the state should provide active and aggressive leadership in the training of apprentices. The logic for continuing a state program includes the following: the state should preserve and improve a healthy business climate; the state has a responsibility to inventory its skilled human resources and to maintain a balance between supply and demand; too few craftsmen are

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8. The decision to conduct an intensive analysis of every facet of New York's apprentice training was made by the Industrial Commissioner, M. P. Catherwood, who, having recently assumed his post, wisely felt that he needed additional non-bureaucratic insights into the multitudinous operations of the New York Dept. of Labor. Whether the Commissioner was wise in his choice of consultants might be open to question.

being trained; rapid technological change demands effective training systems; and similar arguments.[9]

The question of employer and union interests in apprenticeship is perennially importance, since this training involves an employment status in which both parties have a specific interest. Employers, more so than unionists, were critical of government-sponsored apprenticeship training. Nevertheless, the consensus among employers was that "the state has some responsibility for ensuring a competent work force but that the present Bureau of Apprentice Training, from the Council member to the field representative is not making a reasonable contribution towards the problem of assuring an adequate supply of skilled craftsmen." Organized labor representatives, on the other hand, "had few reservations concerning the necessity for state promotion of skilled manpower training."[10]

Although it was concluded that the state should continue its apprenticeship activity, clarification of the mandate under which the Bureau operates was desirable. Accordingly, it was recommended that the apprenticeship law be changed, so that the Apprenticeship Council would become an advisory body and be freed of all operational responsibilities. At the same time, the council was asked to assume a research orientation and analytical, promotional, and innovating responsibilities. A specific suggestion was also made to consider the appointment of a qualified Negro to the council. But the most radical recommendation concerning the apprenticeship law was the suggestion that the state assume a broadened responsibility in training, i.e., "The legislation should specify that the Department of Labor has a responsibility for the encouragement and promotion of apprentice training and other industrial training programs."[11]

The requirement that each apprentice receive 144 hours of related instruction during every year of his apprenticeship has repeatedly run into snags of one kind or another ever since the idea was first conceived. Public schools were asked to assume responsibility for such instruction, but with less than adequate financial support and often lukewarm support from trainees, this requirement has never been fully or satisfactorily met. It was recommended, therefore, that the subject be thoroughly reviewed, and that as a result of such review new and more flexible approaches be taken towards this requirement. For example, special pre-apprenticeship classes must be provided; correspondence school courses substituted for classroom activity; technical institutes other than high schools utilized; and consideration given to tax rebates to employers who paid for related training.

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9. *Ibid.*, pp. 66-7.

10. *Ibid.*, p. 64.

11. *Ibid.*, p. 74.

The last major area of recommendations concerned relations between the Federal Bureau of Apprentice Training and the New York State Bureau of Apprentice Training. Federal representatives were dispatched to New York early in the 1940's, before the state developed its own program. Some of them (18) were still there in 1959 when this study was conducted. Inevitably, in these circumstances it was charged "that there is duplication and overlap of function and activity in the promotion of apprentice training because the efforts of the State and Federal people are very loosely coordinated."[12] The recommendation on this matter suggested that federal personnel could remain in the state, but that a written agreement be negotiated in which the activities of federal and state representatives would be delineated. Effective coordination would be the practical result.

The 1960-66 Period

The record compiled by the New York BAT since 1960 was taken from several sources, including the following: apprenticeship council meeting minutes and actual and personal interviews with operating officials. Serious efforts have been made during this period to accommodate apprenticeship policy and program to the public and private interests. It would be fair to say, as a generalization, that although the state has not made spectacular progress during this time, neither has it evidenced complete failure.

Conventional evaluation technique places great emphasis on the quantitative record; to these we turn. Quantities of programs, number of apprentices in training, and number of establishments during the period 1960 through 1965 are shown in Table 2. Compared to the growth in number of apprentices in training for the nation as a whole during this period, New York state acquitted itself relatively well (see Table 1). Unfortunately, however, apprentices in training in New York dropped in 1965, for the first time since 1960, while national registrations showed a modest increase. It may be belaboring the point, but it is still important to remember that (1) apprenticeship statistics are notoriously unreliable, and (2) there is no way of knowing to what extent and how these numbers would differ, given no state support or given radically different support. And, judging by the language of the annual reports, these statistics do not signify any overwhelming sense of accomplishment to the responsible department officials.[13]

Perhaps reasonable assessments of state apprenticeship activity can be determined by reverting to more qualitative terms. At a minimum, it is possible to compare the decisions, practices, and changes made

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12. *Ibid.*, p. 82.

13. It is possible that the New York Apprentice Regulations of 1964 (Equal Opportunity) were causally related to this drop.

TABLE 2.

Apprenticeship in New York State, 1960-65

Year	Number of programs	Number in training (registered programs only)	Number of establishments
1960	2,137	16,332	20,355
1961	2,333	18,381	19,118
1962	2,486	20,982	21,714
1963	2,473	21,706	21,541
1964	2,565	21,398	20,797
1965	2,660	20,601	15,211

Source: Annual Reports of the N.Y.S. Department of Labor for years 1960 through 1965.

Definitions: A program is a formal course of training designed to teach workers the skills of a particular trade or craft. The training is carried on under actual job conditions, i.e., on the job. Supplemental instruction required by the program is supervised by the local school authorities. A program of training may be conducted by an individual employer, a group of employers, or by a combination of employer and employee groups, known as a Joint Apprenticeship Committee (JAC).

Active programs are those in which at least one apprentice is currently in training.

Programs are cancelled at the request of the employer or his agent, or by the Bureau of Apprentice Training in those cases where the employer has gone out of business or where the employer cannot or will not conform to the Bureau's requirements, where requirements may concern wages, facilities for training, the ratio of journeymen to apprentices, etc.

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during the years 1960-66 with the needs as expressed in 1959.

That state officials were keenly interested in making necessary changes, so as to produce a viable apprenticeship unit, is beyond question. Proof of this is available in the actions and decisions made early in 1960 within the Apprenticeship Council and by Department of Labor officials. Early in 1960, for example, state officials met with Federal BAT and arrived at an understanding of what their individual jurisdictions and responsibilities should be. Although this agreement did not and does not completely eliminate the inherent possibility for disputes between the two parties, it did recognize the existence of a problem. There were other administrative improvements instituted dur-

ing 1960 including, among other actions, the development of realistic staff training. But the most far-reaching decision was made when it was decided to redraft the state's apprenticeship law so as to specify the state's interest and to achieve more effective operations.

New York labor law was duly amended in 1961; the Apprenticeship Council became an advisory body to the Industrial Commissioner, and the Commissioner, in turn, was given broader executive power in the conduct of apprenticeship promotion activities. Apart from these changes, the new law attempted to articulate a "statement of public policy," which read:

> Skilled manpower constitutes a great resource in this State. Apprenticeship programs through supervised training and education, develop skilled craftsmen and help meet the increasing needs for such workers in the state's labor force. The continuing development of skilled manpower is essential for individual self-realization and an expanding industrial economy. To these ends, it is the declared public policy of the state of New York to develop sound apprenticeship training standards and to encourage industry and labor to institute training programs.[14]

These legislative changes were accompanied by intensive efforts to resolve problems of long standing—like related instruction—and to create a truly modernized state agency for the promotion and encouragement of industrial training. The minutes of the December 11, 1961, Apprenticeship Council meeting point with satisfaction to real accomplishments, while not underestimating the complications that they would face in the future. It was reported, among other things, that there was growing recognition of the state's role in journeyman training and "other" industrial training, and that changes were forthcoming in related instruction. A resolution was approved which read, "Resolved, that the Industrial Commissioner recommend to the Governor the appointment of a Negro as a member of the Council." All these developments are aptly summarized by the following notation in the minutes:

> During the past two years we have been engaged in improving the effectiveness of our staff. At the same time, we were dedicated to expanding apprenticeship. We added new occupations, and we increased the number of apprentices from about 16,000 to almost 19,000. We are proud of that record because that has been done within the conservative framework of truly apprenticeable occupations.[15]

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14. Article 23, Section 810, Apprenticeship Training in New York State Labor Law, 1961.

15. Minutes of Meeting of New York State Apprenticeship Council, December 11, 1961.

National manpower policy history was made in 1962 with the passage of the MDTA. In a very interesting and somewhat parallel effort that year, the New York State Department of Labor established a new Division of Manpower, designed to develop programs for a more effective use of manpower resources, with particular emphasis on coordinating state and federal training and retraining programs. State apprenticeship operations were made a part of the new division, thus at least theoretically enabling a unification of manpower policies and programs on a comprehensive basis.

From the passage of the MDTA up to the present time, the New York State Apprenticeship Council has continued to devote its time to policy matters such as the following: determining the apprenticeability of new occupations (a mysterious process whereby some occupations like welder and maintenance mechanic repairman and dry-cleaning laundry equipment serviceman are held to be apprenticeable, whereas others like oil burner repairman are declared unworthy of apprenticeability); the role of "other" forms of training; and increasingly over these years, the matter of discrimination in the selection and appointment of apprentices. Meanwhile, the operations phase of the state's program was increasingly concentrating on the task of developing, coordinating, and overseeing on-the-job training under MDTA. Two developments with both policy and operational aspects took up increasingly greater amounts of staff time through 1965 and up to the present: (1) the prevention of discrimination in apprenticeship, and (2) the development of a "new look" for state-sponsored apprenticeship training. Before turning to a more detailed examination of these two developments, at least a tentative evaluation of the state's training operations during 1960 to 1966 can be assayed. In very shorthand terms, the following represents what has been done and what remains to be accomplished:

Accomplishments	*To Do*
(1) Attempts to resolve their jurisdictional dispute with the "feds."	(1) It is still unclear as to what role federal BAT personnel should play.
(2) Attempts to train and upgrade staff.	(2) Some appointments are still made in terms of political affiliation.
(3) Efforts to develop viable "other than apprenticeship" training programs.	(3) Decisions as to what the state's role in apprenticeship should be.
(4) Legislation appropriate to needs 1961—Apprenticeship Law 1964—Equal Opportunity in Apprenticeship	(4) Clarification of the state's role in determining the apprenticeability of occupations.

	1966—Manpower Training		
(5)	Development of viable equal opportunity legislation and compliance procedure.	(5)	Expansion of the volume of apprenticeship within the state.
(6)	Efforts to develop a "new look."	(6)	Provide appropriate related training.
(7)	Research, experimental, and developmental projects in training and retraining.		

Evolution of a "Hard Line" Equal Opportunity Policy

The state of New York promulgated new apprentice training regulations in 1964 that were designed to assure "equality of opportunity for qualified persons in connection with registered apprenticeship programs." This policy and the procedures worked out to insure compliance are not mere lip service to the cause of social justice; they are, instead, the most demanding example of this particular form of equal opportunity policy that has originated at either federal or state levels. Whether this is a valid claim, and how and why the policy evolved, can be gleaned by reading the following account.

On February 27, 1964, a bill was introduced into the New York legislature "To amend the executive law and the labor law, in relation to equality of opportunity for apprenticeship training." The effective core of the bill makes it an unlawful discriminatory practice for an employer, labor organization, employment agency, or joint labor-management committee controlling apprentice training programs "to select persons for an apprentice training program registered with the State of New York on any basis other than their qualifications, as determined by objective criteria which permit review." In a very interesting addendum in their report of 1963-64 the New York State Joint Legislative Committee on Industrial and Labor Conditions observed about the passage of this law:

> This was a highly controversial matter in the closing days of the session. The AFL-CIO opposed it and when it first came up in the Assembly there were not enough votes to pass it. But such was public pressure that the opposition collapsed and four days later it was passed, 135 to 10.[16]

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16. New York State Joint Legislative Committee on Industrial and Labor Conditions, Annual Report, 1963-64, p. 42.

Just before this addendum, the report of the joint committee contains a very scholarly chapter on the needs and possibilities for legislation, or changes in legislation, concerning discrimination in employment. In the final section of their report they reviewed the U. S. Department of Labor regulations issued on January 17, 1964, with respect to discrimination in apprenticeship and then concluded:

> The action of the Federal Bureau seems the most promising move thus far in this field. It is recommended that similar action be taken by the State. Thus, the legislature could require that any public construction within the state must employ only apprentices enrolled in registered programs, under the New York State Apprenticeship Council, which was established by law in 1945. Thus far the State Council has persisted in a policy of neutrality with respect to recruitment and discrimination, for fear that a more positive stance might alienate employers and/or unions. [17]

In any event, the law was passed and was followed six months later by the promulgation of specific regulations by the Industrial Commissioner to implement the act. It is because of these regulations that the characterization "Hard Line" is used. Laws have been passed, almost all too frequently, to regulate practically every facet of human activity, but the difference between just another law and an effective law lies in the manner in which it is administered and enforced. These new apprentice training regulations which became effective on September 1, 1964, require the following: sponsors of apprenticeship programs must provide public notice of openings in such programs; selection of applicants in terms of race, creed, color or national origin is prohibited; applicants for admission must be graded by objective standards; records must be kept; and complaints must be processed through the machinery of the State Commission for Human Rights. Noncompliance means that apprentice training programs may be deregistered or registration denied to new programs.

What was the concatenation of forces and pressures that resulted in this new state policy? To understand this it is necessary to retrace some of the chronology of earlier attempts to eliminate or to control discrimination in apprenticeship.

New York is justifiably proud of its record on social legislation, but as the Joint Legislative Committee noted in their report of 1963-64, the New York State Apprenticeship Council was something less than aggressive about discrimination until 1964. That the Apprenticeship Council was, from time to time, aware of the problem area is clear in the record of their minutes. But even before the events of the 1960's, New York changed its labor law (1957) by the requirement that apprenticeship

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17. *Ibid.*, p. 41.

agreements must contain a clause that selection was on a nondiscriminating basis. Throughout the 1960's, council members were officially aware of the existence of problems in the selection of apprentices. The State Commission Against Discrimination brought it to their attention, as did the publication and dissemination of critical analyses such as the one prepared by Herbert Hill entitled, "The Negro Wage-Earner and Apprenticeship Training Programs." And from time to time the state, either by legislative or administrative decision, acknowledged the truth of the allegations that there was sometimes discrimination practiced in the selection of apprentices. In 1961, for example, when the first of several recent apprenticeship law changes was made, it was recommended that a "special emphasis" be placed on widening opportunities for the training of members of minority groups. The Apprenticeship Council also passed resolutions calling for greater opportunities for Negroes and nonwhites. Also in 1961, the New York BAT recommended: the appointment of a Negro council member; the appointment of a statewide committee on Equal Apprenticeship Opportunities (such a committee was actually appointed on May 1, 1962, and became known as the Brennan Committee), and, that school guidance counselors should be urged to encourage "qualified boys to apply for apprentice openings in skilled trades." There matters stood until the federal government became actively involved in antidiscrimination policy in apprenticeship in 1963.

It became more and more apparent that special efforts were necessary to expand minority group opportunities in apprenticeship as of 1963. No longer would it be possible to argue—as some New York Apprenticeship Council members did when first faced with the new federal policy on apprenticeship—that state field representatives couldn't act as policemen on matters of discrimination, and that what was needed was "more voluntary adherence to the spirit and the letter of our present law."[18] Federal pressure to obtain equal opportunity in apprenticeship programs continued, however. From both political and bureaucratic levels the "Feds" made it clear to New York that this time the pressure for nondiscrimination could not be denied. This is not to suggest that the impetus for change came only from the federal government; there were, for example, some voices on the New York Apprenticeship Council and many New York Labor Department officials who were deeply committed to bring about real changes in apprenticeship selection practices. A special committee of the Apprenticeship Council reported early in March 1964 that:

> We have concluded that in view of the Federal rules devised by the U. S. Department of Labor to prevent discrimination in apprenticeship, effective January 17, 1964, the New York State Department of

18. Minutes, New York State Apprenticeship Council, September 10, 1963.

> Labor would be rendering a public service if it prepared and promulgated a program consistent with the federal, to promote equality of opportunity in apprenticeship. We, therefore, recommend that the Industrial Commissioner develop a new regulation to implement in a special way the several nondiscrimination in employment features of New York State Law.[19]

In their report they also suggested guidelines to put teeth into the regulations. The basic decision had been made—the state must develop equal opportunity standards for the selection of apprentices, as effective as those propounded in Washington, or even more effective. From this point forward, apprentice training officials, labor department administrators and, of course, lawyers, hammered out draft after draft until a consensus was finally reached. Who should keep what kind of records? In what ways can one define objective? What is wrong, if anything, with permitting selection points for a filial relationship if a program sponsor requests such an arrangement? Should unsuccessful aspirants to an apprenticeship be informed concerning the reasons why they were not selected? Eventually and slightly contrary to the generalization that group discussion tends to produce watered down compromises, agreement was reached for a strong and, what was hoped would be, workable set of regulations. And after submission of the plans to the Federal Administrator of Apprenticeship Training, in accordance with Title 29 CFR Part 30, the New York plan was duly approved on November 9, 1964.

COMPLIANCE AND IMPLEMENTATION

The regulations that were finally promulgated assigned the task of ensuring compliance to the Bureau of Apprenticeship—a task that was foreign to them since, traditionally, they perceived themselves as training consultants or labor-management experts, but certainly not as policemen. Because of their new role and their genuine fear that there might be widespread cancellation of apprenticeship programs, the development of specific procedures for implementation of the new regulations was carefully checked and rechecked. As one phase of this planning, for example, BAT personnel went into the field to pretest their procedure on hundreds of apprenticeship sponsors across the state. More on that will follow, but first some detail on what compliance actually entails.

On September 1, 1964, the date when the New York apprentice regulations became effective, there were 2,694 registered apprenticeship

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19. March 3, 1964, Report of the Council Committee on Equality of Opportunity in Apprenticeship.

programs that were required to comply with the new law or face the penalty of deregistration. Deregistration, it should be observed, might convey community disapproval as well as subject an apprentice program sponsor to an economic penalty if engaged in federal government contract work. Of the 2,694 programs 374 were large programs (more than 5 apprentices each). And, in turn, the 11 largest apprenticeship programs all happened to be in the city of New York. All program sponsors, large and small, in order to be declared in compliance with the regulations, had to take the following actions: (1) Submit for the approval of the Industrial Commissioner a statement of the selection procedure, selection standards, and criteria which would be used; (2) Maintain certain records and follow certain procedures.

(See Appendix for Apprentice Training Regulations and Statement of Compliance.)

Clearly the central core of the New York compliance procedure is the "objective" selection standards and criteria that must be used. Objectivity in selecting apprentices means that a program sponsor must use a point-rating scheme in which he must specify the specific weight that he has given to education, work experience, seniority, aptitudes, and personal traits. In determining what weight to attach to any of these selection criteria, a program sponsor is encouraged to use recognized psychological tests and test services and is cautioned that when interviewing candidates, sponsors "shall develop and maintain a written formulation of objective criteria by which the interviewer is to judge applicants, and the interviewer shall prepare and maintain a written evaluation of the applicant in terms of the criteria." No selection credit is allowed for a filial relationship: a decision which was difficult to reach since, quite legitimately and without discrimination, many unions have cherished traditions of passing on to their sons a legacy as a skilled craftsman.

The first formal indication of how program sponsors would react to apprentice selection regulations was obtained in the pilot survey of 400 (336 useable responses) "small program sponsors" (programs containing five or fewer apprentices in training) conducted throughout the state. BAT field representatives interviewed 336 program sponsors concerning their general reaction to the apprentice training regulations; and, more particularly, concerning their reactions to procedures and forms. These sponsors agreed, most unanimously, that the forms and procedures were understandable. But they were not so unanimous about the "overall purpose and approach of the regulations." One hundred and sixty nine of them were "very much" in approval of the regulations while 64 seemed to disapprove and 149 expressed some disapproval. Especially interesting is the fact that they were reluctant about accepting the "recruitment services of the Division of Employment." Only 35 were very much inclined in this direction while 164 were negative about such services. The survey demonstrated that although there was some grumbling about

red tape and some general objections to government interference, the majority of the program sponsors generally agreed with the intent of the new regulations. Their cooperation was forthcoming.

What is the record of compliance approximately two years (there was a "year of grace" up to September 1965) after the apprenticeship selection regulations went into effect? What has been the effect of those compliance procedures on registered apprenticeship programs? According to the August 1966 report of the New York BAT, 2,844 registered programs were in compliance and 62 previously registered programs were not in compliance. The 62 not in compliance represent 2.3 percent of all apprenticeship programs and 13.8 percent of all registered trainees in the state. Negotiations by Department of Labor officials are being conducted with those not in compliance, instead of moving to precipitous deregistration.

Sponsors of apprenticeship programs who have not yer complied with the state's regulations have, of course, a variety of motivations for not doing so. Judging by their correspondence with state officials and judging by the impressions of those who have been talking to them, there is little outright refusal to comply; there is, instead, concern about excessive paper work or the conviction that having met federal standards they should automatically receive state approval. Other reasons for noncompliance include the following: confusion or disagreement concerning what fees for medical and other examinations are proper; difficulties engendered by the fact that major programs often had long lists of previously accepted candidates, which could be used up to September 1, 1965; disillusion with the Employment Service (at one time a major program threatened to deregister if forced to use the Employment Service); no need to hire new apprentices, therefore, no need to comply; international unions slow about issuing policy guidelines to local unions; and simply lack of knowledge—as in the case of some "Equal Opportunity Employers" who felt that their pledge of equal opportunity was sufficient.

The impact of the new apprentice regulations on apprenticeship activity in New York can now be, at least partially, assessed.[20] For one thing, the regulations caused many difficulties for bureaucrats, union leaders, and for employers, and it introduced new complexities into the planning and conduct of training programs. Just to take one example, OJT programs under MDTA auspices frequently were involved in the new procedures because OJT sometimes leads to formal registered apprenticeship. Another obvious effect was to place apprenticeship program sponsors under considerable pressure to conform to the new policy. As far as any records available to this investigation show, only two ap-

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20. Unfortunately, data concerning the most important impact of these equal opportunity regulations, that is the number of Negroes or minority group members who enrolled in apprentice training programs in the past two years are not yet available. Civil rights organizations and the Apprenticeship Council are attempting to develop these data.

prenticeship program sponsors asked to be formally deregistered; but BAT officials were optimistic about the chances of obtaining their eventual compliance. But by all odds the most important of all effects is that pertaining to the volume of apprenticeship training activity. Unfortunately, available data do not point to verifiable conclusions. On the one hand, the number of apprentices in training in New York decreased for the first time in seven years, but whether this is due solely to the equal opportunity regulations is not at all clear. Also, as already indicated, 62 apprenticeship programs are not yet in compliance. In more qualitative terms it could appear to be the judgment of the New York apprenticeship field representatives that in New York City, where the great bulk of apprenticeship training actually is conducted, there was a definite slowing down and delay in apprentice registrations during the past year. Although they were inclined to portray employer and union responses as "reluctantly accepting," and although they felt that their work in promoting apprenticeship was made more difficult by the new equal opportunity regulations, these field representatives concluded that if apprenticeship volume was down it was due to some slowing in the construction and graphic arts industries and only partially due to the new regulations.

It was suggested earlier in this paper that New York State had evolved a "hard line" policy and procedure for maintaining equal opportunity in apprenticeship training programs. The New York program, in contrast to the federal (Title 29, Labor Part 30--Non-Discrimination in Apprenticeship and Training) specifies selective criteria and procedure rather precisely. The New York regulations, which have the effect of law, spell out every conceivable aspect of implementation, compliance, and review. And, not unimportantly, New York has allocated sufficient staff and administrative machinery to validate its concept by actual inspection of pertinent records and procedures. The federal program, on the other hand, has not organized as specific nor as elaborate control mechanisms as those used in New York. Finally, in reaching conclusions about the relative toughness of the New York program, it is somewhat persuasive to acknowledge that at least one very large union sponsor of apprenticeship training claims that, because it has complied with the federal regulations, its procedures should be approved in New York, but the state has rejected their claims. The state continues to insist that the more stringent state procedure concerning the evaluation and ranking of candidates must be followed. It would seem manifest that New York State is serious about providing equal opportunity in all phases of apprenticeship.

Now we turn to other plans that are being made in New York to expand and to improve apprenticeship.

NEW DIRECTIONS IN NEW YORK APPRENTICESHIP

It is demonstrably clear that New York State has had a genuine interest in all facets of skilled manpower development over the past six years. Also clear is the fact that many responsible state officials have been striving to delineate a truly viable rule for the state in promoting, encouraging, and maintaining apprenticeship training programs. There has been, and there continues to be, friendly but critical dialogue concerning the need for, and usefulness of, apprenticeship training. A combination of circumstances, during these past years, has produced today a situation in which the chances for making truly significant changes in organization and in concept are good. These propitious circumstances include: experience under the OJT provisions of the MDTA; a practically new Apprenticeship Council under new and dynamic leadership; public acceptance of the need for education and training at all levels; and probably most immediately important, the fact that the staff of the Division of Manpower have prepared a challenging report in which they suggest that New York State should view apprenticeship training as a teaching-learning or acquisition of skill process, rather than "putting in time."

Training programs offered under MDTA have served many useful purposes; they have aided the unemployed, helped employers and helped to persuade one and all concerning the importance of training. Not the least of these several consequences, however, is the impact MDTA programs have had on some of the traditional wisdom of apprenticeship and, correspondingly, on those who administer training activity. Training administrators, both public and private, began to appreciate that on-the-job training was indeed a viable concept, especially if one had an open mind concerning the amount of time that should be devoted to learning certain skills or whole occupations. BAT representatives are responsible for the OJT programs that are conducted under MDTA auspices so that they became intimately familiar with a number of interesting and sometimes anomalous, developments related to training philosophies.

What became increasingly evident was that MDTA programs were being given in a variety of occupations that are classified as apprenticeable trades—occupations such as automobile body repairman, automobile mechanic, painter, baker, draftsman, butcher, gas engine repairman, laboratory technician, and many others. In 1965 11,000 persons were trained in the skilled trades, and 19,000 in the semiskilled occupations. In this fashion the MDTA carried out its mandate to train the unemployed for occupations for which there was some assurance of employment after training. In this latter connection it is instructive to note the number of apprenticeable occupations in the following certified demand occupations for New York State in 1965.

TABLE 3.

Certified Demand Occupations under MDTA for New York State

Occupation	Estimated demand	Rank	Number being trained	Rank
Machine operator	1,841	5	1,584	5
Auto mechanic	1,357	5	1,073	7
Meatcutter	1,210	8	530	12
Auto body repairman	1,014	9	768	9
Auto service station attendant	715	11	651	10
Maintenance man	500	13	510	13
Electrical motor mechanic	455	14	230	17
Oil burner installer and serviceman	359	17	186	19
Draftsman	341	18	197	18
Electrical appliance serviceman	179	20	178	20
Household appliance serviceman	178	21	170	21
Washing machine serviceman	143	23	100	25
Tester, electrical systems	135	24	135	22
Electrical computer mechanic	107	25	80	26
Offset pressman	86	26	105	24

Source: N.Y.S. Department of Labor, Division of Manpower[21]

And many of the MDTA-OJT programs were training persons in preapprenticeship training programs (5,800 total in all OJT programs in 1965) in the hopes that these trainees would, eventually, continue into formal apprenticeship programs. There were actually only 80 persons enrolled in preapprenticeship programs in the summer of 1966.

Portents for the future from the MDTA training are not completely visible. But it may be useful to be cognizant of the fact that MDTA training in apprenticeable occupations is occurring in those occupations where organized labor has not developed real strength. Unions in automobile repair are relatively weak as compared to the unions in the construction trades, for example. By and large, MDTA programs have not trained persons in those occupations where strong union pressures guard traditional apprenticeship routes, except for preapprenticeship training. Yet MDTA programs have demonstrated the efficiency of a training system that includes proper supervision of trainees—thus assuring good instruction—something that some traditional apprenticeship

21. New York State Department of Labor, "New Directions for Apprenticeship in New York State" (June 1966), (mimeo.).

programs lack. Furthermore, the benefits derived from MDTA training subsidies are not lost on BAT and other government officials. Whether all this means that apprenticeship is, in fact, obsolete, or just the reverse, that apprenticeship will expand on this nucleus of persons who were trained in preapprenticeship programs, is not immediately apparent. What was and is apparent is that these developments spurred reappraisals of the traditions and practices in the house of apprenticeship.

As previously indicated, the convergence of MDTA, administrative changes, a strong desire to improve, and other forces, led to a formal report prepared by BAT staff in June 1966 suggesting far-reaching changes for state apprenticeship. The case for legislative policy and operational change was made in the following terms: (1) skilled manpower will continue to be important to the state's economy, (2) approximately 85 percent of the working journeymen in apprenticeable occupations acquire their skill and knowledge by means other than apprenticeship training, (3) in certain instances, shorter training periods are realistic in terms of changing skill requirements, while in other occupations, extended training may be called for. "Therefore, the developmental process should be broken down into a series of steps and a separate form of recognition given for completion of each step in the program," (4) there is nothing sacred about a 4,000 hour minimum training time; it might well be reduced to 2,000 hours, (5) current apprenticeship training concentrates almost exclusively on about 15 occupations, but overlooks a broad spectrum of occupations, (6) MDTA has proved the superiority of flexible approaches to training problems, (7) related instruction in apprenticeship has been honored mainly in the breach—50 percent of New York apprentices receive little if any related instruction, (8) certification as now practiced is unnecessarily rigid, and (9) research in skill development is nonexistent. Proceeding to act upon these and similar assumptions, the report recommends a series of legislative and operational changes. In addition to recommendations which flow directly from the above logic, they propose financial incentives for training, new definitions of apprenticeability, expansion of the state's role in OJT training, and, a suggestion that the traditional posture of the BAT in respect to standards be changed from permissiveness to one of mandatory nature.[22] More important than these recommendations (for many of them have been previously submitted), is the fact that the new apprenticeship council has agreed to invest its time in order to evolve concepts and programs appropriate to the challenges and needs. Simultaneously, the Division of Manpower is embarked on a massive research endeavor in which they will distill New York and other experiences into position papers for Apprenticeship Council study and action. If even a small portion of this promise is fulfilled, it would represent very welcome progress.

22. *Ibid.*, pp. 2, 3, 4 and 5.

Space limitations have precluded a thorough comparative analysis of state apprenticeship policy and program. From what has been reported of the New York State program, however, it would be consistent to say that New York is seeking to understand and to properly manage its skill development systems—as befits a great state.

CONCLUSION

Our public policies and programs in support of apprenticeship remain essentially what they were when such policies were first instituted. What has been referred to as the conventional wisdom of apprenticeship is still being applied today, but the evolution of our active manpower policies over the past half-dozen years is generating powerful pressures for change.

The role and function of the federal and state Bureaus of Apprenticeship Training are being modified daily by the workings of the Manpower Development and Training Act. Increasingly, development of OJT programs under the provisions of the MDTA assumes ever greater proportions of their time as public pressure mounts for ever greater expenditures of MDTA funds to be channeled into OJT rather than into institutional programs. Furthermore, the MDTA is providing financial support to apprenticeship in those instances where OJT programs constitute the first year of formal apprenticeship. To what extent these OJT-MDTA programs increase or diminish our total volume of apprenticeship will bear more watching. More immediately apparent is the pressure generated by these developments to embark on a public policy of additional financial support of apprenticeship and perhaps of all industrial training.

Our public apprenticeship agencies have made real strides towards providing equal employment opportunities in the selection and use of apprentices. Some might say that these officials were pushed and shoved into this role, nevertheless, considerable progress has been made. And, as a very desirable side effect, disadvantaged youth are being offered additional employment opportunities. It needs to be reemphasized that effective equal employment opportunity regulations were developed despite some understandable ambivalence of the bureaucrats and affected trade unionists.

Merchandising of the apprenticeship training concept continues to be a divided responsibility between the federal and state governments. It is almost a classic case of the coordination problem that exists in our society. Efforts are made, from time to time, to divide responsibilities to the mutual benefit of all parties including the public; but the fact remains that there is often more competition than cooperation between federal and state BAT personnel.

New York State apprenticeship development activities, although still wedded to the conventional wisdom, is striving valiantly to create an

appropriate apprenticeship policy and program that will serve the public interest in the state. Changes are not easily consumated, however, in an activity as complex as apprenticeship that involves an employer-employee relationship, a teaching-learning system, and long-standing traditions. Many trade unionists view apprenticeship as an effective mechanism for controlling their jobs and working conditions; but even more important, they see apprenticeable trades or crafts, never jobs or occupations. And, when an occupation is sometimes admitted into the roster of apprenticeable trades, it goes through a process not too far removed from magic rites. Yet despite these complications, New York is currently engaged in the process of redefining its concept of public policy and program so as to emphasize the teaching-learning phases of the activity. To do so will require modification of many cherished convictions.

On several other occasions during the past six years, I have wrestled with the question—should the government at either or both federal and state levels intervene with employers or unions in order to increase or improve apprentice training? On each of those occasions I have been persuaded that there is indeed a public interest in apprenticeship, but for various reasons our public policy and program did not properly serve that public interest. When weighing the evidence, the scale tipped in favor of the catalogue of opportunities and problems because the results were so meager. Today the need for many forms of occupational training, including apprenticeship training, cannot be refuted; many voices are suggesting that a complete new look is required in our public and private training systems. It may well be that the times are right for developing a new wisdom about our apprenticeship training programs.

DISCUSSION

LEON S. TUNKEL
STATE OF NEW YORK DEPARTMENT OF LABOR

Among the more notable aspects of apprenticeship in this country is that, although apprenticeship purports to be a systematic approach to the training of skilled craftsmen, the concepts, goals and structure are so diversely perceived as to suggest that its characteristics as a program are largely in the "eye of the beholder." Indeed, the wide disparities in (1) determination of what is an apprenticeable occupation, and (2) what "apprentice-training" design shall apply, indicate that clarification of concepts is essential to any evaluation of effectiveness of the program, and to the derivation of plans and actions to improve the program.

Starting, then, with the term "apprenticeship" itself, it appears to be necessary to go considerably beyond the loose and almost mystical concept that some work experiences, possibly supported by some formal instruction, yield a journeyman after some period of time between one and five years.

Apprenticeship offers a training structure in which the principal tool of learning is provided by the "live" work situation of actual employment. But all types of employment offer similar learning potential through work experience. Or to state it differently, learning by experience is a concomitant of all life situations, including the work situation. Therefore, if apprenticeship is to be something more distinct and unique than just "work-experience," it must have structural elements which maximize learning effectiveness in the experiential setting. A description of the "job-processes" in an apprenticeable occupation is the current practice in apprenticeship. However, the categories of work experience which are thus established are quite broad and loosely interpreted. Studies of apprenticeship have established that, in most instances, apprentices receive random work-experience exposure, and that such exposure coincides poorly with the job processes and time sequences which have been established as the framework for the apprenticeable occupation. Nor are there, in the main, reliable procedures for validating whether or not the job processes have been covered by work experience, and, even more importantly, whether or not the requisite skills have in fact been *learned*. Without gainsaying the

problems and difficulties involved in adjusting the work environment to provide the apprentice with some reasonable conformity to the requirements of the "job processes," some ultimate validation that the skills in question have been learned in reasonable measure is clearly indicated. Without some such validation, apprenticeship is not distinguishable from other work experience structures.

Another aspect of apprenticeship which calls for clarification is in the anomalies posed by the classification "apprenticeable occupations." Traditionally, such classification has been made in recognition of a certain level of complexity in the journeyman skills of an occupation. Such levels of complexity are generally expressed by the minimum time period in which such skills are normally acquired, leading to the designation of "journeyman." It becomes difficult, then, to reconcile the variations in time periods which range from one to five years (and more in some occupations in the graphic arts) leading to the same accreditation, namely journeyman, which is usually construed to mean "craftsman." Here again, in order for the conditions of apprenticeship to have some articulation within the system, the levels of skill complexity, as reflected in the duration of the apprenticeship, would appear to call for accreditation which would in some manner reflect the differences in levels of complexity.

The role of "related and supplementary instruction" in apprenticeship casts still another note of confusion and contradiction. At least for those apprenticeship programs which have the official endorsements of the federal and state agencies which register such programs, related instruction of at least 144 hours a year is a requirement of the program. The validity of such a requirement is contradicted by the actuality. Half, or more, of the apprentices who receive certificates of completion of apprenticeship *do not* receive or participate in any organized form of related instruction. Conversely, in many occupations which have highly organized apprenticeship activities, such as in some of the building trades, almost the entire thrust of attention to training is with the related instruction aspects of the program. There is no question that occupations vary in the extent to which technical and theoretical knowledge are fundamental to craftsmanship. However, the existence of some substantial body of theoretical knowledge is one of the key criteria in identifying an apprenticeable occupation. Apprenticeship certification, in the absence of satisfactory completion of related instruction, would therefore constitute a severe derogation of the entire concept of apprenticeship as well as a disparagement of the importance of the theoretical elements of a given craft or occupation. Admittedly, there are many difficulties in providing related instruction for all apprentices. However, the alternative of overlooking the requirement of related instruction is inadmissable, and would challenge the entire concept of apprenticeship as an efficient system for transmitting craftsman skills.

There are two additional factors which seriously impugn the validity of the apprenticeship concept as it is currently implemented. First, half or more of the currently practicing journeymen become journeymen without participation in an apprenticeship program. Second, on-the-job training, sometimes coupled with related or other classroom instruction, has emerged as a viable form of occupational training subject to various types of state and federal financial support. Such on-the-job training designs are frequently indistinguishable from their apprenticeship counterpart, except in duration which is usually limited to one year. The inescapable question then becomes, are these two so-called "types of training" different? Or, are they different stages of the same concept? And if so, isn't there an artificial overlap, with attendant inequities, in the application of the federal and state funds involved?

The advantages to the program are that it:

1. Permits extension of the well tested theory that ***orderly*** and ***controlled*** work experiences, with supporting classroom instruction, is a highly efficient training method.
2. Places the program emphasis where it belongs, namely on whether or not the skill or knowledge has been acquired, rather than on arbitrary time periods. Accreditation can still take into account the normal time periods in the same manner than a BS degree is uniformly accepted as a four-year accomplishment, although there are some collegiate programs where the requirements can be three years, and others where they are normally met in five years.
3. Permits skill development from one level to the next, consistent with the demands of the market place, while still offering reasonable guarantees via the accreditation process that a person has acquired the skill and knowledge of phase one in any occupation and is, therefore, eligible for training in phase two, including eligibility for the requisite wage. Since this appears to be the major route by which journeyman status is attained, the only formal program which exists for the orderly acquisition of journeyman skills should be under conditions which can embrace the larger portion of the need, rather than the small group which it now accommodates.
4. To the extent that the evaluation standards and accreditation standards are objective and uniform, they can be reliable indicators to employers in regard to the ability levels that they are hiring. To many of the unions concerned, this would open up a means of broadening their constituency for work which is now performed in the market place at segmented or "watered down" skill levels which are currently excluded from craft union participation.

In conclusion, then, there emerges from these various anomalies the need for strengthening the structure of apprenticeship along the following lines: (1) Adoption of standards which are more directly related to skill and knowledge content, rather than period of time elapsed; (2)

Adoption of standards for evaluating the successful acquisition of the required skill and knowledge through some reasonable objective and uniform system of evaluation; (3) Adopting a system of program accreditation which will define the content and the level of training and skill which has been acquired; for example, a one-year certificate for a one-year program; two-year certificate for a two-year program, etc., (4) Consideration for other nomenclature within the umbrella of apprenticeship or on-the-job training. Such terms as "internships" could be introduced to differentiate between high skill and moderate skill programs. Also such structures as preapprenticeship, and subapprenticeship could be added, with appropriate articulation to the apprenticeship program as a whole; (5) Financial support from government funds, such as is now available for OJT, should be equally available to the comparable periods of apprenticeship programs, and under comparable standards.

SOL SWERDLOFF
U.S. DEPARTMENT OF LABOR

Professor Foltman has provided us with an interesting and rather thorough and valuable discussion of apprenticeship, summarizing many unanswered questions. The paper questions some of the basic premises on which apprenticeship is based. It does not, however, as I was led to believe by the conference program, provide an evaluation of recent changes in apprenticeship programs. Thus, it is more difficult to be a discussant. The paper raises interesting questions that may help us to evaluate our thinking about what apprenticeship is and where apprenticeship is going. A number of questions arise in my own mind: What should apprenticeship be—how does it differ from other types of training? In what occupations does apprenticeship appear to be the best kind of training and in these occupations what percent of the workers need this comprehensive training?

Professor Foltman suggests the possibility that apprenticeship should be extended to clerical and other white-collar and service occupations, noting that in some European countries this is the case. I really wonder whether persons in such occupations require apprenticeship training, or whether they might be better trained in schools or through some less formal on-the-job training; although I do note that electronic technician training is now offered through apprenticeship in some of the large aircraft companies.

He complains about the inadequate statistics on apprenticeship, and I certainly agree that we should know more about how many people are being trained through all types of apprenticeship.

He makes the point that apprenticeship programs are not producing sufficient skilled craftsmen to meet the demand for skilled workers. This is undoubtedly true, but the problem is broader. Even if we are able to adequately project the need for craftsmen as a result of growth and replacement needs, we still don't know how many craftsmen have to be trained by apprenticeship and how many might acquire their skills in some other way. We know that in some occupations a higher percentage of journeymen have been trained through apprenticeship than in others. For example proportionately more tool and die makers have completed apprenticeship programs than have carpenters. This might very well be as it should. For some occupations the principal reason for having apprenticeship is to train workers for particular skilled jobs, foremanships, or other supervisory positions. Whereas in other occupations, follow-up studies of former apprentices indicate that they stay as journeymen rather than take the supervisory jobs.

Even though we are not sure of what the optimum proportion of training through apprenticeship should be, at least we do know—until shown otherwise—that one method of increasing the level of proficiency in a given skill (if that is our goal), is to increase the rate of apprenticeship training. It also becomes apparent that the percentage of apprentice-trained craftsmen in many trades will decline if the number being trained through apprenticeship is not increased, since that number will not even replace experienced craftsmen who retire or die. This has been recognized recently by the action of two large building trade unions who have announced that they will significantly increase the rate of apprenticeship training—partly in response to current shortages and to some degree as a result of information developed by the Department of Labor indicating that, unless such training increases, apprentice-trained craftsmen will make up a continually smaller proportion of the total skilled work force.

I disagree with Professor Foltman's observation that the number of skilled craftsmen is relatively static and, therefore, people are correctly being guided into growth occupations rather than skilled occupations. I think the data actually reveal that skilled workers are maintaining their share of total employment, and that their number has increased. It has been estimated that some 4 million skilled jobs will have to be filled throughout the U. S. during the next 10 years because of the growth of the economy and the need to replace workers who die or retire. Thus the skilled trades will be a major source of jobs for the 18 million young men who will be expected to enter the labor force during the next decade, especially those entering directly out of high-school.

He mentions a number of ways that are desirable to increase apprenticeship training—primarily if the government helps to finance this type of training. Financial help under MDTA (such as the training of automobile mechanics by Chrysler dealers in which a percentage of the

costs is being paid by the federal government) is an example of this. However, it is the opinion of at least one official of a large company that the cost *per se* is not the deciding factor for engaging in lengthy training such as apprenticeship; but the question is whether they can retain the trainees. Also our study of shortages indicates that employers may be finding it difficult to get apprentice applicants that meet their standards. Another suggestion is that firms engaged in National Defense, which are reimbursed for training under the National Defense Act, should be required to use some of their reimbursable training funds for apprentices or similar on-the-job training. Some people would extend this reasoning to tax allowances for any firm conducting long-term training, as John McCauley said earlier. John suggested that MDTA "executed a successful end run around apprenticeship by training unemployed persons in all occupations but including very specifically skilled occupations." This may be true to some extent. However, MDTA training is emphasized as a means of aiding unemployed persons to upgrade certain skills and is not meant to be a substitute for the formal, longer term apprentice training. In fact, the MDTA has had a program to bring people into apprenticeship training—by their so-called preapprentice training program which we heard about earlier. Moreover, the skilled occupations for which MDTA has been most successful in training are those in which apprenticeship traditionally has not been prevalent, i.e., occupations such as automobile body repairmen or automobile mechanics. (Nevertheless, the expansion of MDTA training of this kind may be relevant if expanded apprenticeship training proves desirable but infeasible.)

Much of Professor Foltman's paper involves a discussion of discrimination in selecting apprentices, and what New York State has been doing about this problem. I am sure that in this afternoon's program this will be discussed thoroughly so I won't comment on it now. He brings up the question of length of the apprenticeship training period. He has apparently found very little research concerning this question or any new developments in this area. I understand that in one of the large automobile companies, a two-year program of on-the-job and related training has been suggested to upgrade people into skilled jobs and to select those already working in the department with some knowledge of the occupation.

Perhaps we will have to wait for the Purdue, Northeastern, and other studies to learn more, and to evaluate various innovations in apprenticeship.

Section V

Curtis C. Aller, Chairman

NEGRO PARTICIPATION IN APPRENTICESHIP PROGRAMS

RAY MARSHALL and VERNON M. BRIGGS, JR.
THE UNIVERSITY OF TEXAS

ABSTRACT

The article represents a summary of a study designed to identify and to evaluate approaches and methods to increase Negro participation in selected apprenticeship programs. In addition to reviewing the available literature pertaining to the topic, the findings are drawn from extensive personal interviews with officials of the apprenticeship establishment (unions, employers, and specialized government agencies dealing with apprenticeship) and with Negro youths who are participating in or who have sought entry into such programs.

Issues such as the perpetuation of discriminatory selection practices; union apprenticeship traditions like nepotism and control over supply considerations; the paucity of actual Negro applicants to existing programs; the difficulties in providing qualified Negro applicants to programs; and the obstacles confronting Negroes in passing written and oral examinations for admission are all reviewed in detail. More than simply indicating the trouble spots, an effort is made to determine the proper weight to be assigned to each of these problem areas.

The article concludes with specific public policy recommendations pertaining to the demand for apprentices in general; the role to be assumed by anti-discrimination policies; and the measures needed to increase the supply of qualified Negro applicants.

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* This article is based upon our findings from a larger research project financed by a grant from the Office of Manpower, Automation, and Training (now known as the Office of Manpower Policy, Evaluation, and Research) of the Department of Labor; and was presented at a conference on Research in Apprenticeship Training co-sponsored by OMPER and the Center for Studies in Vocational and Technical Education, The University of Wisconsin, September 8-9, 1966.

INTRODUCTION

A number of developments during the 1950's and 1960's focused attention on efforts to increase the number of Negroes in apprenticeship programs. One of the most significant was the growing conviction of civil rights leaders that apprenticeship training was an important means of overcoming some of the difficulties that Negroes found themselves in during these years as a result of technological displacement from many of the jobs they had traditionally held. Because of their declining relative labor force participation rates and high unemployment rates during the 1950's and 1960's, the economic position of Negro males and teenagers deteriorated markedly compared to white males. And the situation for many Negroes has not improved as a result of the tight labor market of 1966. For example, between June 1965 and June 1966, the unemployment rate for Negroes 18 and 19 years old *increased* from 27 percent to 32 percent, while the white unemployment rate in that age group *declined* from 19 percent to 15 percent. It was thought that by producing well rounded craftsmen apprenticeship training would make Negroes less vulnerable to these technological changes.

Another factor focusing attention on efforts to increase the number of Negro apprentices was the virtual absence of Negro journeymen and apprentices in some of the skilled trades, especially in the construction industry. The 1960 Census reported that there were only 2,191 non-white apprentices in the country, or 2.52 percent of the total; there were only 79 non-white electrical apprentices and 62 non-white apprentices in the plumbers' and pipefitters' trades. Although it is difficult to believe that these figures are accurate, the paucity of Negro apprentices has been confirmed by many other studies.[1]

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1. For example, studies in Califomia and New York found that Negroes constituted only 1.9 and 2 percent of apprentices, respectively; in New Jersey, Negroes held only about .5 percent of apprentice positions. (U.S. Civil Rights Commission, *Reports on Apprenticeship*, 1964, p. 91.) A survey of 1,000 apprentices in Florida by the Advisory Committee of the U.S. Commission on Civil Rights failed to disclose a single Negro. Although the count was only approximate, Maryland civil rights officials reported finding only 20 Negroes among approximately 2,400 apprentices in that state. Of some 50 apprentice programs in Tennessee, only four (bricklayers, carpenters, roofers, and cement finishers) were known to accept Negroes before 1960; in 1961, a breakthrough occurred when one Negro apprentice enrolled in each of the following trades in Oak Ridge: electrical, machinist, sheet metal, and millwright.

   A 1964 survey of 989 construction industry contractors, 281 employer associations, and 731 unions by field teams from the President's Committee on Equal Employment Opportunity (PCEEO) found that in 30 Southern cities, the number of Negro and total apprenticeship selections were as follows:

	Total	Negroes
Electricians	978	2
Sheet Metal Workers	441	0
Carpenters	1,120	20
Ironworkers	365	0
Plumbers	792	4
Total	3,696	26

A third factor causing the civil rights movement to concentrate on apprenticeship training was the vigorous opposition of some craft unions in the 1960's to accepting Negroes into their organizations. While the unions' motives for exclusion perhaps were not based entirely on racial considerations, the vigor with which they defended their restrictive policies, and the fact that there were no Negroes in their unions, made it difficult to avoid the conclusion of racism. These contests focused the public's attention on a group of exclusionist unions in the building trades and gave the problem of getting Negroes into these unions a symbolic significance which often obscured the quantitative importance of the jobs Negroes were likely to get through apprenticeship training. At the same time, however, there can be little question that, with the momentum the issue has built up, many more Negroes will become apprentices than would have if the apprenticeship sponsors had not created so much fuss and fury.

THE RESEARCH PROJECT

The immediate objective of our study was to identify and evaluate the approaches and methods which had been used to increase Negro participation in selected apprenticeship programs. Our major ultimate objective was to recommend policies which would enable Negroes to increase their participation in and successful completion of apprenticeship training. We sought primarily to examine the recent dynamic situations involving the participation of Negroes in apprenticeship programs in ten major cities with large Negro populations.[2] The cities were selected in such a way as to illustrate a variety of problems and remedial programs, as well as to be geographically representative.

In four states and 21 cities outside the South, the selections were

	Total	Negroes
Electricians	906	14
Sheet Metal Workers	432	12
Carpenters	3,273	70
Ironworkers	301	4
Plumbers	906	14
Total	5,818	114

The lack of Negro apprentices was not restricted to the construction trades, however; the 1964 compliance survey of government contractors by the PCEEO found only 483 Negroes (or 1.3 percent) among 21,500 apprentices.

Probably the largest proportion of Negroes in apprenticeship programs in any city before 1963 occurred in Washington, D.C., where there were 74 Negroes among 253 apprentices in programs sponsored by individual employers and 142 Negroes among 1,591 apprentices in joint programs; Negroes constituted 8.9 percent of registered and 29.3 percent of individual employer programs. Many of the individual employers were Negro contractors in the non-union sector of the building trades.

2. The ten study cities were: Atlanta, Cincinnati, Cleveland, Detroit, Houston, New York, Philadelphia, Pittsburgh, San Francisco-Oakland, and Washington, D.C.

Since we were primarily interested in "trouble spots" where civil rights organizations or government agencies were attacking or about to attack the apprenticeship establishment (unions, employers, and specialized government agencies dealing with apprenticeship), no attempt was made to study Negro participation in all apprenticeship programs. We therefore paid less attention to the trowel trades and carpentry, where Negroes are known to have had little difficulty—except for some situations in the South (which we studied in connection with Atlanta and Houston)—and concentrated our attention on those programs with very few Negroes or where Negroes were having trouble being admitted.

It seemed at the outset that revealing answers to our questions would require detailed interviews with all of the categories of people involved in getting Negroes into or keeping them out of apprentice programs, as well as with the Negroes who were at various stages of entry into or exit from those programs. Our interviewees therefore fell into two broad groups: (1) officials and representatives of the Bureau of Apprenticeship and Training (BAT), state apprenticeship agencies, the Bureau of Employment Security (BES), state employment services, local building and construction trades unions, regional and national AFL-CIO bodies, employer and joint industry associations, employer training groups, joint apprenticeship committees, apprenticeship information centers, city government agencies, local human relations commissions, schools, federal equal employment agencies, and civil rights organizations; and (2) Negroes who had applied to apprenticeship programs and had failed to follow through on their applications, had been rejected, were accepted, or had dropped out. In each case, we sought the answers the particular interviewee was likely to have to certain specific questions, but we did not use a structured interview; rather, we placed a premium on letting the interviewee tell his own story.

Among officials and representatives, 121 different individuals were interviewed, although the actual number of interviews was greater, because some people were interviewed more than once. In addition, we held a number of special group meetings, conferences, and seminars with counselors, specialists in testing, scholars, and union and industry officials. There also were interviews with 25 miscellaneous persons, such as Negro and white journeymen and white apprentices, who are not reported in the above total.

We conducted interviews with 127 Negro apprentice participants. Of these, 61 were accepted and remained in apprentice programs, 11 were waiting to enter, 25 were rejectees, 20 failed to complete requirements, and ten dropped out after being accepted.

WHY ARE THERE SO FEW NEGRO APPRENTICES?

Table 1 indicates our findings in each city regarding the number of Negroes currently indentured as apprentices. In most cases, the Ne-

TABLE 1.

Number of Negroes in Apprenticeship Programs by Selected Trades in Selected Cities

City	Unions						Date of figures
	Electricians (IBEW)	Ironworkers (structural)	Pipefitters	Plumbers	Sheet metal workers	Operating engineers	
Atlanta	0	0	0	0	0	0	1966
Chicago	9[a]	1	2	15	3	n.a.	1966
Cincinnati	0	0	0	0	1	0	1965
Cleveland	2	1	0	1	1	n.a.	1965
Detroit	4	0	1	2	1	n.a.	1966
Houston	0	0	0	0	0	n.a.	1966
New York[b]	275	14	15	31[c]	11	7	1966
Oakland	1	n.a.	0	1	3	n.a.	1964
Philadelphia	1	0	1	2	1	n.a.	1965
Pittsburgh	0	0	0	0	0	0	1964
San Francisco	n.a.	n.a.	n.a.	2	n.a.	n.a.	1966
Washington	9	2	8	8	0	19	1965

[a] The only figure available pertains to admissions between December 1, 1965, and August 1, 1966.

[b] New York figures indicate the number of Negroes accepted into apprenticeship programs between 1963 and 1966. Because of dropouts, the actual number of current participants is less.

[c] Combined total of Locals #1 and 2.

Sources vary with each city, but in each case they represent the most official data available. (Note that the table includes figures for Chicago, although that city was not included in the survey.)

groes listed there were the first in their city to serve apprenticeships in the selected trades.

Although it is fairly easy to make a list of the factors responsible for the lack of Negroes in apprentice programs, assigning the proper weight to each is much more difficult. Any appraisal obviously will be influenced by the vantage point from which the problem is viewed. The apprenticeship establishment is likely to emphasize the absence of qualified Negro applicants, while the civil rights movement is likely to emphasize discrimination by unions, employers, and apprenticeship agencies. Similarly, various groups are likely to differ in their assessment of the progress that has been made. Civil rights groups are likely to look at the paucity of Negroes in apprenticeship programs and minimize the changes, while the apprenticeship establishment is likely to emphasize the relative progress made in spite of great difficulties.

Discrimination and Segregation

One of the most important problems impeding the increase in the number of Negro apprentices has been the institutionalization of certain racial employment patterns. As is well known, about the only time Negroes were able to practice a wide variety of skilled trades was under slavery, when they were protected by the powerful slave-owning interests. After emancipation, Negroes were restricted mainly to agriculture and to certain menial jobs, except for a few trades like the trowel crafts, in which a large number of slaves had been trained and which could be passed on from generation to generation because of relatively stable job content. Whites monopolized the more highly skilled operations of many of the newer occupations which grew up after slavery and perpetuated their control by dominating the more advanced training programs. The only way Negroes have been able to break this monopoly, in many cases, is through craft training received at Negro colleges and institutes, mainly in the South. (For example, one of our interviewees, the principal Negro plumbing contractor in Cleveland, was trained at Tuskegee Institute in Alabama and moved to Cleveland during the 1930's. He perpetuated the supply of Negro plumbers in Cleveland by forming a plumbing school.)

Once the Negro share of the labor force becomes sufficiently large to become a threat to whites (through undercutting wages, breaking strikes, and satisfying the labor needs of employers who might be boycotted by whites), Negro craftsmen sometimes have been able to overcome union resistance. But by that time, many of them have acquired sufficient job control to prefer operating on a non-union basis. As a general rule, however, Negroes have been restricted to certain kinds of residential and repair jobs and therefore have not had any opportunity to work on a wide variety of projects and acquire the necessary skills to become well rounded craftsmen. It was only in the crafts which were

relatively easy to learn—the trowel trades and carpentry—that Negroes represented a threat to whites. We have found, however, that even in some local unions in these trades, Negro journeymen have been excluded from unionized jobs.

When segregated job patterns became institutionalized, they tended to perpetuate themselves and to change very slowly. In considerable measure this was because, after a while, little pressure came from Negroes to change the system. The aspirations of Negro youngsters were conditioned by the realities of the situation they faced, and the occasional Negro who attempted to crack the system faced such overwhelming odds that few of them tried it and few were encouraged to try by their parents or counselors. Moreover, the skilled trades institutionalized their recruitment patterns in such a way as to exclude most Negro youngsters from any opportunity to enter the system.

Other Union Attitudes

Although discrimination was and is a serious problem within the apprenticeship establishment, it would be a severe mistake to assume that it is the only difficulty. As is well known, the exclusiveness of some of the craft unions is designed as a method of job control. These trades realize full well that apprenticeship training is important, because they can maintain their jobs and wages in the face of non-union competition and alternative production techniques only if they are more productive than the other options available to an employer. This is one reason the skilled trades unions place so much emphasis on getting qualified applicants. In support of nepotism, craft union members often argue that because they know the craft and its traditions, their sons are more likely than outsiders to complete their training and to become competent craftsmen.

Of course, union leaders' realization of the need for competent craftsmen does not mean that the union will restrict itself only to the most competent applicants. Nepotism, for example, obviously produces inefficiency if a relative is less competent than an excluded nonrelative. But union craftsmen have been willing to take this risk in order to get their sons into the trade. Similarly, unless one is prepared to take the untenable position that all Negroes are inferior to all whites, the unions produce incompetence by racial exclusion and often, as in many Southern cities, endanger union conditions by driving competent workers into non-union sectors.

Several of the business agents we talked with admitted that the unions were defeating their purposes by nepotism and racial exclusion, but professed an inability to change the system. Craft unions tend to be closely controlled by their members, and business agents are therefore reluctant to propose measures which are unpopular with the rank and file, for fear that they will be voted out of office. Business agents

often expressed the feeling that the decline of nepotism and the acceptance of qualified Negroes were very good for their trades, and they were glad to be able to blame the government or their international unions for taking the initiative in making such changes.

However, the attacks on the apprenticeship system in recent years have often frozen the apprenticeship establishment into a defensive position, making it very difficult to promote equal apprenticeship opportunities. In part, this defensiveness is natural, but it also stems from what the apprenticeship establishment feels are its critics' unfairness and lack of understanding of the system. Moreover, the skilled trades unions, especially those in the construction industry, resent being singled out for attack by the civil rights movement for a problem which they consider not to be peculiarly theirs. Craft unionists also feel that charges of discrimination have been exaggerated, as indicated by the lack of valid complaints before government anti-discrimination agencies and the paucity of qualified Negro applicants in spite of vigorous drives launched by a variety of agencies in major Northern cities.

Craft unionists are particularly resentful of such government actions, which they consider are based on ignorance of the apprenticeship system and which, they contend, are dishonest, in the sense that government officials are trying to demand preferential treatment of Negroes under the guise of "affirmative action," while disclaiming any intention of requiring preferential treatment. Moreover, the union leaders argue, the government is attempting to achieve these deeds through blackmail—by threatening to withhold or cancel government contracts. Since these leaders feel that the charges against them are politically inspired and unfair, they naturally are going to resist efforts to get them to change.

The Paucity of Negro Applicants

Our studies of the ten major cities make it abundantly clear that special efforts are required to get qualified Negro applicants for many apprenticeship programs, and that the fears of the unions and the hopes of the civil rights movements both are unfounded. The 1964 survey of the construction industry by the President's Committee on Equal Employment Opportunity (PCEEO) found only 38 Negroes in a total of 3,575 known applicants to five apprenticeship programs (electricians, plumbers, sheet metal workers, ironworkers, and carpenters) in the South; there were 11,689 applicants to these programs in the non-South, only 370 of whom were Negroes. In many cases, the number of applicants was not known; Negroes were only 2.7 percent of the known applicants and only 1.7 percent of the known selectees.

Our interviews indicate a variety of reasons for the lack of Negro applicants. For one thing, considering what was said earlier about the institutionalized patterns of job segregation, it is not surprising that many youngsters who otherwise might be interested in applying for ap-

prenticeship programs do not do so. As one of our Negro interviewees put it, Negro youngsters have learned from long experience that when the white community says, "everybody is welcome," they really don't mean Negroes. It therefore takes positive and clear evidence to convince Negro youths, counselors, and parents that the patterns really are broken. In some cases, the demonstrations and other attacks on unions and apprenticeship programs may have caused unions and employers to lower their racial barriers, but simultaneously, by publicizing discriminating practices, they have strengthened the conviction among Negroes that they cannot get into craft unions; after all, if demonstrations do not succeed in getting people in, what chance does the lone Negro applicant have?

It is apparent, however, that many qualified Negro youngsters neither know about nor aspire to apprenticeable trades. Negro youngsters who have graduated from high school share the prevailing American bias against manual occupations. Indeed, if anything, Negroes probably aspire to the skilled trades less than whites, because they have fewer "role models" among relatives and friends in these trades.[3]

These aspirations are reinforced by school and employment counselors, who often have a misconception of the opportunities available to the Negro youngster in the skilled trades. Even those who do make realistic appraisals face opposition from the youngsters' parents, who resent having counselors advise their sons to go into manual occupations. Of course, counselors frequently are condemned for their ignorance of apprenticeship programs, but the apprenticeship establishment's secretiveness about its activities and research scholars' neglect of this area have not contributed to their enlightenment.

We have also discovered, however, that many Negro youngsters who learn about apprenticeship training and express an interest in it do not follow through and avail themselves of the opportunity to become apprentices. This has been a common problem in the concerted efforts made to recruit Negro youngsters for apprenticeship programs in Cleveland, Philadelphia, Chicago, and other cities. Some of the reasons include the facts that the time lapse between submission of an application and the beginning of the program was too long; the low wages received by an apprentice are not competitive with other job opportunities; the cost of acquiring tools and of paying testing fees and entrance dues is prohibitive; and the lure is often too attractive for a high school graduate to seek a college education which will afford an opportunity for white-collar employment.

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3. The impression we gained from our interviews on this point tends to confirm the findings of B. A. Turner, who studied the occupational choices of 2,012 high school seniors in 14 Negro, two white, and two integrated schools. Of the respondents, 66.2 percent aspired to professional and managerial positions; 14.1 percent to clerical and sales jobs; and only 3.2 percent to the skilled trades. See B. A. Turner, *Occupational Choices of High School Seniors in the Space Age* (Houston: Texas Southern University, 1964).

It was interesting to note that of our interviewees who dropped out of apprentice programs, after having been accepted, all cited reasons other than any associated with racial difficulties. Indeed, very few of our 71 interviewees who entered apprenticeship programs told of difficulties which were primarily of a racial nature. There were a few situations where Negro apprentices had difficulties with white journeymen, but these were not clearly racial incidents and usually were caused by the tradition of hazing all first-year apprentices. None of our interviewees expressed any feeling of racial difficulties with their instructors or with fellow apprentices, although some felt that they were discriminated against in employment. In one case, for example, our interviewer discovered that a Negro apprentice in Pittsburg was being used only on federal jobs. In another case, four Negro apprentices in Detroit felt that their assignments to the Board of Education were not as desirable (because opportunities for overtime were severely limited) as the jobs given white apprentices; the Negro apprentices felt that the Board of Education got all of the Negro apprentices as a result of the fact that it had earlier denied the IBEW local the use of school facilities for its apprentice program because it had no Negro apprentices in it. The one Negro in the Cleveland plumbers' program has been employed only by a Negro contractor.

Although we discovered very little overt racial hostility toward Negro apprentices, a number of them expressed the feeling that, while they were courteously treated, they were not really accepted on an equal basis.

Lack of Qualifications

Negroes also are disadvantaged in meeting the qualifications for entry into apprenticeship programs. Most programs require high school, and although Negro educational levels have been improving markedly, the median educational levels of non-white males (10.0 years) still lagged 2.2 years behind that of white males in 1965; 60 percent of whites but only 37 percent of non-whites had completed four years of high school. These statistics do not tell the whole story, however, because, as is well known, Negro education has been inferior to that of whites in all sections of the country.[4]

Accordingly, it is not surprising that the average Negro high school graduate has more trouble than his white counterpart passing even a fair test for entry into an apprenticeship program. Professor Kenneth B. Clark's conclusion concerning employers is equally applicable to apprenticeship programs.

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4. *Equality of Educational Opportunity*, issued by the Department of Health, Education, and Welfare (Washington: GPO, 1966), p. 20.

> The fact is that the massive inefficiency of the public schools where the masses of Negroes go, does the discriminating for any prejudiced employers, so that he doesn't have to do it himself.
>
> All he has to do is to maintain even minimum standards of qualifications in such basic subjects as reading or arithmetic, and as things now stand, the vast bulk of the Negro youngsters from the working class, the lower middle class, are unable to meet the minimal standards for employment in other than menial lower status jobs.[5]

For whatever reason, it is generally accepted that Negroes do not do as well as whites on written tests. But many observers argue that tests used by the employment service and other testing agencies are culturally biased, in the sense that they are standardized on white populations. This criticism is generally conceded by testing experts to be valid, and efforts are under way by a variety of agencies, including the Bureau of Employment Security, to develop "culture-fair" or "culture-free" tests.

Other criticism relates to the questionable use of tests by joint apprenticeship committees, which usually have developed their own tests. The experts tell us that it is highly unlikely that JAC's or union business agents without the proper training can construct and administer valid tests. Others criticize the weight given to oral interviews in the apprenticeship selection procedures. In some cases, Negroes were rejected on oral tests because of such things as having applied to more than one apprentice program, which the sponsors took to indicate that they really were not interested in the particular trade. In other cases, Negroes were marked down on the oral because they expressed an interest in a job rather than the particular trade. Because these reasons for rejecting an applicant seem trivial to outsiders, and because they consider it unwise to leave much discretion in the hands of biased apprentice sponsors, some civil rights leaders have advocated that the oral be prohibited or that it be given very small weight in the over-all selection process.

However, we are persuaded that it would be unwise to either minimize the oral or to require apprenticeship sponsors to quit using it. Our evidence suggests that Negroes are likely to have more trouble with so-called "objective" written tests than with oral interviews. Of our 25 interviewees who were rejected, 14 failed written tests, and six failed orals after passing written tests. Of the 61 interviewees who were accepted into apprenticeship programs and stayed in, only 11 did so by passing written examinations alone; 22 got in by oral examination alone; 19 passed both written and oral examinations; no examinations of any kind were given in seven cases; and the examination process

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5. *Social and Economic Implications of Integration in the Public Schools*, Seminar on Manpower Policy and Programs (U.S. Department of Labor, Manpower Administration, Office of Manpower, Automation, and Training, 1964), p. 6.

is not clear from two interviews. The 275 non-white electrical apprentices in New York got in without taking any examination other than a brief interview. Of our 91 interviewees who either took tests or were admitted to unions without tests, only six were barred solely because they failed the oral tests, and only 11 got in solely by taking written tests. Moreover, we know that in two cases apprenticeship sponsors slipped the Negro applicants the written tests in advance of the exam, and in another case the Negroes who were tested were permitted to exchange papers; the only Negro to fail this particular test was one who sat by himself.

Our conclusion is that if apprenticeship sponsors want to take in Negroes, they can do so more easily if they have flexible testing procedures than if they use rigid objective tests. By the same token, however, if they want to exclude Negroes, they can use a flexible testing procedure to do so, or they can raise their "objective" standards in such a way as to limit the number of Negroes who can get in. The point is, of course, that motivations are more important than the tests. Although the question of "fair" tests is one about which the experts are in disagreement, there are some safeguards that can minimize the effects of biased tests: they should be given and interpreted by experts; they should be validated in the setting in which they are used; and written tests should not be the sole means of selection.

WHAT HAS BEEN DONE TO INCREASE THE NUMBER OF NEGRO APPRENTICES?

The policies to increase Negro participation in apprenticeship programs fall into three broad categories: (1) general policies to facilitate the increase in Negro apprentices where Negroes want to enter apprenticeship programs, for instance, better education, full employment, and measures which would increase the total number of apprentices; (2) anti-discrimination policies, such as state FEP laws, court action, National Labor Relations Board rulings, federal and state apprenticeship regulations (such as 29 CRF 30), anti-discrimination clauses in government contracts, the denial of the use of federal funds under Title VI of the Civil Rights Act and action under Title VII of the Civil Rights Act, and measures to encourage voluntary anti-discrimination policies by private organizations; and (3) special measures to increase the supply of qualified Negro applicants for apprenticeship programs, including better availability and dissemination of apprenticeship information, better and more realistic counseling by employment services and by high schools, active recruitment and demonstration to Negro youngsters that apprenticeship programs really are open to them, announcements of apprenticeship openings and qualifications in places accessible to the Negro community, and encouragement of pre-apprenticeship and other remedial programs to make it possible for Negro youngsters to overcome their qualifications deficiencies.

The specific measures that have been undertaken by governments to accomplish these results include: (a) the establishment in 1963, of the Advisory Committee on Equal Opportunity in Apprenticeship and Training (ACEOAT) by the Secretary of Labor, to bring the ideas of labor, management, government, and minority community representatives to bear on this problem; (b) the appointment of a special staff within the BAT to deal with equal opportunity matters (this staff consists of regional equal opportunities consultants, called Industrial Training Advisors, a National Training Advisor, and a Special Assistant for Equal Opportunity to the BAT Administrator) and to maintain liaison with other organizations such as the ACEOAT (the BAT provides administrative and clerical support to the ACEOAT); (c) the provision by the Manpower Administration for 24 apprenticeship information centers (AIC's), jointly administered by the BAT and the BES, in major cities with large minority populations, to collect and disseminate information about apprenticeship training and to maintain cooperative relationships between the minority communities, labor, management, and government services; (d) the encouragement and financial support of pre-apprenticeship programs; and (e) the encouragement and financial support of various private groups, like the Workers' Defense League in New York, the Urban League-NAACP Manpower Advancement Program (MAP) in Cleveland, the massive cooperative apprenticeship program in Chicago supported jointly by the city of Chicago, labor, management, state agencies, and the federal Manpower Administration.

The really crucial questions, of course, are ***how effective are these different kinds of policies, and which are most important?*** We feel it is highly important to raise these questions, not because we think they are good ones, but because they are often asked and because they illustrate an important point about the Negro apprenticeship issue, namely, that we are dealing with a very complex problem which is not amenable to simple solutions. All three categories of remedies obviously are necessary. However, our studies lead us to the following observations.

(1) Sanctions have not been especially successful in getting Negroes into apprenticeship programs, though they have perhaps had the effect of creating a climate among apprentice sponsors which is conducive to change, resulted in considerable education of all the parties concerned about apprenticeship and civil rights, caused apprentice standards and programs to become more formalized, and encouraged some apprentice sponsors to raise their qualifications. Sanctions and the threat of sanctions have had differential effects on the apprenticeship establishment. As noted earlier, to the extent that the sanctions have been based on misunderstandings of the nature of apprenticeship and its importance to the sponsors, they have strengthened the defensiveness of the apprenticeship establishment.

At the same time, however, sanctions have succeeded in breaking down some of the barriers and strengthening those persons within the apprenticeship establishment who favor equal apprenticeship opportunities. The possibility of the use of sanctions seems always to strengthen "voluntary" compliance programs: as Dr. Johnson put it, "the threat of a hanging tends to concentrate one's thoughts." But their effectiveness against the apprenticeship system is limited by a number of considerations: many employers have weak motives for continuing the system; apprenticeship is largely a private system of training which could operate without government support if it had to; and the major sanctions available to government agencies are not strong. In conclusion, although we think sanctions are necessary (and should be imposed against the worst offenders immediately, when it becomes clear that voluntary efforts to gain compliance are not likely to succeed), their main value probably is not in the imposition of penalties, but in encouraging the apprenticeship establishment to get its own house in order. We are persuaded that voluntary programs can be more important than sanctions, because the parties obviously can do things voluntarily that they would not be compelled to do by law in a democratic society. There is a real question, for example, whether anti-discrimination legislation legally can do more than require the parties to stop discriminating; it cannot really cause them to take "affirmative action" to further integration of the kind needed to get more Negroes into apprenticeship programs.[6]

(2) Our second observation is that the relative importance of each of the three sets of policies varies with time, place, and circumstances. General efforts to maintain full employment and expand and improve the apprenticeship and general educational systems are always important. Similarly, perhaps it was necessary to emphasize sanctions during the early period of breaking the barriers to Negroes' entry into these programs. But while the sanctions should continue to be perfected, there is currently an obvious need to shift the emphasis to the special programs which stress increasing the supply of qualified Negro applicants. This is not because we think discrimination is no longer a factor, but because we think the best way to determine the extent to which it is a problem is to get supplies of qualified applicants. If the applicants are forthcoming and yet do not get in, then public policy will have to give greater emphasis to such sanctions as policing the qualifications and testing systems.

With respect to the effectiveness of special measures to increase the supply of qualified applicants, we think that many of the right things already are being done, but that many of them need to be

6. See *State Commission for Human Rights* v. *Mell Ferrell, President of Local 28, et al.*, New York Sup. Ct. App. Div. No. 9433 (November 18, 1965).

strengthened. One of the main obstacles to the flow of Negroes into apprenticeship training has been poor counseling, but this is not entirely the fault of the counselors, for their work requires information that has not been and still is not available to them. There is a special need to get reliable projections on job opportunities in various trades. In addition, apprenticeship agencies have not done enough to make realistic information available on the qualifications and opportunities in various trades. There is also a need for better dissemination of information on such matters as the qualifications and time for testing in specific apprenticeship programs.

We are persuaded that the apprenticeship information center idea is a sound one, *if it is assumed that the objective of public policy is to emphasize apprenticeship training for whites, Negroes, and other minorities.* Our experience, however, suggests that effective AIC's require the following: the cooperation of apprenticeship sponsors in making available information concerning apprenticeship programs and informing the centers of the results of their referrals; the support and cooperation of state employment service and regional apprenticeship agency officials; the staffing of the centers with competent personnel who enthusiastically support the objectives for which the centers were established; and the active involvement of all of the parties which compose the advisory committees to these centers and who are chosen to represent all sectors of the community concerned with apprenticeship. Unfortunately, the AIC's have seldom had this type of support. Moreover, it is obvious to us that a significant explanation of the AIC's poor reputation among civil rights leaders is due to a misunderstanding of the centers' function and to over-inflated expectations of the centers' abilities. Civil rights leaders sometimes did not realize that the main function of the centers was to act as a clearing house for information for all groups, not to guarantee that Negroes were accepted by joint apprenticeship committees.

Although some of the pre-apprenticeship training programs have encountered great difficulties (such as the carpenters' program in Washington), others (like the Washington bricklayers' program) have been much more effective in assisting disadvantaged youth to qualify for apprentice positions. The keys to success, besides the obvious one of better administration, seem to be careful selection, jobs for the trainees, and cooperation from the unions involved. Many unions naturally are alarmed about pre-apprenticeship programs which they fear will flood the market with poorly trained workers. Some of their concern is based on the feeling that the promoters of preapprenticeship programs have a very unrealistic conception of the number of apprenticeship openings.

What Needs to be Done?

The responsibility for overcoming obstacles to equal apprenticeship opportunity rests upon all of the parties involved. But there is a logical division of labor among governmental and private agencies in accomplishing various objectives. Within the government, we feel that the municipalities have a major direct responsibility, especially in construction apprenticeship programs, because the building market is mainly local in scope and because each city has its own reality which municipal governments can understand and deal with more effectively than any other agency, if they are prepared to do so. In addition, most Negroes now live in cities.

This is not to argue, however, that other governments do not have a role to play in dealing with this problem. In some cases, the city government might be ineffective, or the local political situation might produce a governmental paralysis, making it necessary for national labor, business, and civil rights organizations and the state or federal governments to intervene. The kinds of functions which seem most logical for city governments to do include maintaining communications with the major groups involved and being ready to collect information and mediate disputes; encouraging the establishment of private programs to recruit and train Negroes and other disadvantaged youngsters; providing information and assistance in getting federal financial aid for remedial programs; and, if necessary, being prepared to use the sanctions at the city's disposal to combat discrimination. In some cases, sanctions such as contract cancellation and the denial of school facilities can be more effectively used by municipalities than by the federal government.

But the federal government obviously also has a major responsibility for all three classes of remedies mentioned earlier. The federal government must be primarily accountable for those general measures designed to maintain full employment, and it can do much to expand the total number of apprentices in order to provide more opportunities for all groups. Yet one should not expect the mere numerical expansion of apprenticeship opportunities to appreciably alter the degree of Negro participation in these programs. The projected increase in the number of skilled non-whites between 1965 and 1975 is about 35,000 a year. What proportion of these will be trained through the apprenticeship system? There are perhaps 50,000 total apprenticeship openings each year, and the dropout rate is about 50 percent, so some 25,000 craftsmen will enter the labor market through apprenticeship training, and many of these eventually go into supervisory and managerial positions. With a great deal of effort, it might be possible to increase the proportion of Negroes among new apprentices to, say, 15 percent; this would provide perhaps 7,500 openings and 3,750 graduates a year, unless something is done to reduce the dropout rate. Hence, those that perceive apprenticeship as a major means of resolving Negro unemployment

problems are grossly misinformed as to the number of opportunities that are available for all applicants.

Aside from its responsibilities to maintain full employment, we would recommend that the federal government also undertake the following specific steps:

(1) All anti-discrimination procedures should be removed from the BAT. Enforcement procedures are incompatible with the Bureau's traditionally promotional activities. Similarly, the agency to which the enforcement powers are delegated (the Equal Employment Opportunity Commission or the Office of Federal Contract Compliance) should work closely with the BAT, because of the real danger that ignorance of apprenticeship programs, procedures, and mystiques will result in anti-discrimination measures damaging to these programs, but doing little to increase the number of Negro apprentices.

(2) Financial assistance should be provided to local organizations like the Workers' Defense League, the NAACP-Urban League Manpower Advancement Program in Cleveland, and the concerted Chicago apprenticeship program, which are concerned with the recruitment and preparation of apprentice applicants and are among the most successful operations we have discovered. The WDL's program seems to be particularly effective, because it is based on cooperation with the unions rather than antagonism against them (or publicity-seeking attacks upon them), and because it is undertaking the difficult, but necessary, job of recruitment of qualified applicants.

(3) Special demonstration programs to overcome many of the handicaps which the disadvantaged youngster faces should be considered. For example, contractors and the unions (especially the Laborers) might be encouraged to permit youngsters to work around construction projects in the summer, so that they will get a better idea of what the various trades are like. Another possibly useful project would be for apprenticeship programs to invite qualified applicants from the Job Corps, as is being done in Oregon at the Tongue Point Job Corps Center.

With respect to the labor movement itself, the main problem of discrimination is at the local level. The AFL-CIO has adopted a strong anti-discrimination policy, and, although any program can be improved, the federation seems to be actively doing what it can to implement that policy. The difficulty is that the AFL-CIO has very limited power over discriminating locals. Also, local union leaders, especially in the building trades, too often fear they will be voted out if they adopt non-discrimination policies. Clearly, therefore, the international unions should bear the greatest responsibility for eradicating discrimination, because within the labor movement, only they have sufficient power to accomplish this objective. The excuse of local autonomy should be no more permissible in cases of racial discrimination than it is where locals violate other trade union policies or federal, state, and local laws, especially now that there exists the threat of increasing govern-

ment regulation and severe damage to the entire labor movement unless unions deal with this problem. It would also seem that the discrimination issue is at present sufficiently critical that the internationals should move to eradicate the problem before crises develop. No one can learn as much about discrimination in local unions as the international officers. It would seem a better strategy for the internationals to proceed vigorously—through trusteeships—against the worst offenders than to let discriminating unions damage the whole labor movement.

In addition, measures of a positive nature could be undertaken by both unions and employers to further Negro participation. Such steps could include making it manifestly clear to the Negro community that all qualified applicants will be accepted; reviewing written and oral testing procedures to assure that they are realistic in terms of the requirements for the trades; notifying various community relations organizations, civil rights groups, and Negro leaders when apprenticeship classes are being formed; establishing channels of communication and effective working relationships with Negro community leaders in order to clear up misunderstandings; maintaining careful records pertaining to application experiences which would be available for inspection to authorized persons; seeking out qualified Negroes for membership (rather than passively processing the applicants who show up at the union halls); and providing realistic information on the nature of apprenticeship training to civil rights groups.

Civil rights groups, in turn, also have major responsibilities. They can effectively work with the Negro community to produce qualified applicants for apprenticeship openings and improve information and counseling. If Negroes are encouraged to take advantage of the opportunities open to them, they can produce the labor supplies which experience demonstrates do more than anything else to reduce overt acts of discrimination. The experiences of the Workers Defense League in New York and the Trade Union Leadership Council in Detroit, and the concerted activities of various groups in Chicago, demonstrate that although recruiting qualified applicants for apprenticeship openings requires considerable effort, a flow of applicants can be found in the Negro community if some organization devotes itself full-time to this problem. Moreover, the WDL also discovered that many unions actually are relieved to find a responsible civil rights organization which can supply qualified minorities. However, because of the nature of this problem and the structure of our society, systematized activity by Negroes themselves is a necessary condition to its successful solution. Negro associations can organize to train qualified craftsmen and bring legal action to see that they get jobs.

Furthermore, civil rights groups can work more closely with employers, unions, and governmental bodies to gather information, apply pressure, and supply applicants; compile and analyze facts for presentation in adversary situations; take advantage of poverty and manpower pro-

grams to provide preapprenticeship and other training opportunities for Negro youngsters; and, wherever possible, establish close working relationships with various sympathetic representatives of human relations agencies, companies, employers' associations, and unions.

Thus, it is felt that through concerted efforts by unions, employers, civil rights groups, and—when necessary—government, solutions to this problem can be promoted. They will not come without conflict, however. But conflict should be based on a realistic understanding of the situation and of the other groups' feelings and motivations. It is hoped that our study will contribute to this understanding.

DISCUSSION

DON IRWIN
THE CHRYSLER CORPORATION, DETROIT

Chrysler has 10,600 employees in the apprenticeable skilled trades. This figure includes more than 1,000 apprentices, most of whom are represented by the International Union, UAW. There are an additional 2,600 employees in the non-apprenticeable skilled trades. The apprenticeship program to be discussed is separate from the Automotive Mechanic Program for Dealers, where there are nearly 1,000 more apprentices in training.

Of the apprenticeable skilled tradesmen, more than half are upgraders. There are more temporary employees in the classifications than graduate apprentices. The skills represented are primarily the following: metal and wood layout; tool and die making; boring mill operation; electrical; tool, die, and maintenance machine operation; machine repair; millwright; welder equipment repair; sheet metal work; die making; tool making; jig and fixture building.

Chrysler has had no difficulty, generally, in finding qualified apprentice candidates. In March, over 1,300 applicants were tested, and more than 500 qualified; but internal applicants accounted for 90 percent of those taking the tests. Minorities have been well represented. After selection, some forcing into particular crafts occurs because of lack of knowledge on the part of apprentices about the different crafts and lack of aptitude for certain skills.

Testing has been a useful tool in the selection process. Tests are used primarily to eliminate the non-qualified. Management is less concerned about illiterates than the future promotability of candidates. The tests require average high school level abilities and adequate reading skills. There is no uniform passing score for all crafts. Since adopting the testing program, Chrysler has experienced a sharp reduction in the number of apprentices failing related training.

Pre-employment training and vocational education have been of little value. Schools are not expected to train students for jobs, *per se*. Students need greater exposure to more crafts; their ignorance is great. Also, training in math and reading needs greater emphasis.

Skilled tradesmen play an elite role in our society; a skilled trades job is a proper aspiration for many students. Their income is high—

on the average, over $10,400 in 1965 at Chrysler (average work week 42.8 hours). There are many at the $12-15,000 income level. Except in rare circumstances, it is not likely that the delinquent or the high school dropout will make a good apprentice candidate. Greater effort needs to be directed toward exposing more able-minority-applicants, especially acquainting them with the advantages of a career as a skilled tradesman.

THE NEGRO, APPRENTICE TRAINING PROGRAMS, AND TESTING

IRVING KOVARSKY
UNIVERSITY OF IOWA

THE PROBLEM

A number of industries are experiencing, or will shortly experience shortages of skilled labor. In a few instances, this shortage of labo is an artificial creation, a desire on the part of some unions to limi the supply. Irrespective of the reasons for the shortage, Negroes are clamoring for skilled jobs—a clamor accentuated by the technologica wiping out of many unskilled or semi-skilled jobs. Although doors have opened since World War II via the 14th amendment, Taft-Hartley Act, Railway Labor Act, executive decrees, and state fair employment laws, Title VII of the Civil Rights Act of 1964[1] draws attention to the possible use of tests as a means of denying Negro participation in the skilled labor market.

Testing as a method of selecting employees for jobs has long been part of the arsenal for the "scientific" approach to Personnel Management; but the new federal law, without qualification or consideration of other techniques of selection, seemingly protects the use of the professionally developed test. To the employer and union with a taste for discrimination this suggests a legal means of circumventing public policy requiring fair employment. I hold that employers and unions with a deliberate history of discrimination are incapable of a sudden turnabout and fair hiring because their past behavior is irrational. Society must be made to realize that discrimination is a way of life, rather than an exception. In fact, the immediate value of Fair Employment Practices Commission is conjectural although in the long pull definitely beneficial. A good example of this is the construction trade unions in New York City. Although the State of New York has been blanketed by FEPC legislation for twenty years, only recently has a slight dent been made in the all-white armor found in most construction trade unions. The railroad, airline, finance, and insurance industries have also been notorious for practicing discrimination. Furthermore, employers and unions relying on tests are sometimes unaware that statisticians and

1. 78 Stat. 241.

psychologists skilled in the operation of testing programs find them inherently discriminatory, and unnecessarily damaging to the undereducated segments of our society. For example, the tests to determine apprenticeship appointments do not consider motivation. In addition, language barriers often hinder performance.

The purpose of this presentation is to tie together the public interest in maintaining an adequate supply of skilled labor, with laws favoring fair employment and testing as a means of determining eligibility for apprentice training.

SOME NEGRO HISTORY

As early as 1649, Negroes in Colonial America were employed as spinners, weavers, carpenters, shoemakers, and in other skilled crafts.[2] Trained in an agricultural society, where self-sufficiency of the farm unit was necessary, the Negro slave in the South worked as a wheelwright, cooper, carpenter, sawyer, blacksmith, mason, etc. In fact, Negro craftsmen were leased by their owners to white employers in need of skilled help.[3] In some instances, slaves freed by abolitionists were trained as skilled craftsmen.[4] A poll made in 1850 in Charleston, South Carolina, shows 700 Negro freemen; of these 122 were carpenters, 87 tailors, 30 shoemakers, 18 bricklayers, 23 butchers, and 11 painters.[5] Advertisements sometimes appeared in Northern newspapers for skilled Negroes who had escaped from their white masters.

This background data is intended to quell a thesis too frequently advanced that the Negro is incapable of mastering the intricacies of a skilled trade.

In my opinion, three factors are primarily responsible for the over-all lack of Negro skill at the present time. One, the gradual elimination of the Negro from the skilled job by employer and union discrimination, is well known.[6] A second but less well known factor contributing to the Negro downfall was the direction taken by Negro leaders after the Civil War. Booker T. Washington, the most influential Negro leader of his day, felt that the major hurdles faced by the ex-slave were a lack of basic education, the need to develop skills useful in an agricultural

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2. Gregg, "Industrial Training for the Negro," *The Annals*, Vol. 140 (1928), p. 122.
3. Spero and Harris, *The Black Worker*, p. 11.
4. *Ibid.*, p. 123.
5. Lomax, *The Negro Revolt* (1962), pp. 14-15.
6. Kovarsky, "Apprentice Training Programs and Racial Discrimination," *Iowa Law Review*, Vol. 50, No. 755 (1965), pp. 757-63.

environment, and an appreciation for work.[7] Publicly adopting an Uncle Tom pose, Mr. Washington was able to gain support from white benefactors by promising to limit the education of the Negro and to develop job skills which would not require thinking.[8]

The stand taken by Mr. Washington, which was widely practiced and applauded by the white community, damaged the Negro when the Industrial Revolution marked the end of agriculture as the dominant way of life. The skills that Mr. Washington imparted to Negro students were of limited value in an industrial society; they tied the Negro to agriculture at a time when training for industry could have opened new horizons. At best, the program advocated by Mr. Washington had brief merit, because his educational goals could hardly prove beneficial to the Negro in the long run. In defense of Mr. Washington, he was influenced by his past, and industrial development proceeded more slowly in the South than the North.

The Negro, facing prejudice and without training, was ill equipped to adjust to industry after substantial migration from the South to the North began during World War I. Considering psychological factors, people raised in a state of slavery are bound to experience difficulty making a transition to freedom. In slavery, one's improvement and initiative is seldom encouraged; in fact, a smile and overt docility maximizes success and minimizes pain. In the factory, initiative and self-improvement—attributes frequently knocked out of the Negro—can lead to success.

A third reason for the lack of Negro skill was the failure on the part of the federal government to provide proper direction and leadership at the end of the Civil War. The Freedmen's Bureau—an Army-directed agency created to help the Negro make the transition from slavery to freedom—was forced to operate with a paltry budget and almost no trained personnel.[9] The traditional *laissez faire* approach was responsible for some of the lack of government direction. In fact, not until the 1930 depression when Keynesian theory became respectable could the Negro look to the federal government for help. Although Keynes was unconcerned with racial prejudice, the fact that government intervention was made respectable proved to be a long-run boon for the Negro. And with the advent of World War II, which necessitated even greater government intervention in industry, the Negro took advantage of the wartime holocaust to improve his economic lot. I would mark the 1930 depression and World War II as two events opening the door to Negro economic improvement on a lasting basis.

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7. Brotz, *The Black Jews of Harlem* (1964), p. 96

8. Lomax, *The Negro Revolt*, pp. 32-33.

9. Bentley, *A History of the Freedmen's Bureau* (1955); Pierce, *The Freedmen's Bureau* (1904); De Forest, *A Union Officer in the Reconstruction* (1948).

THE CURRENT PICTURE

Contrary to the opinion of some of the leading economists, notably Professor Friedman of the University of Chicago,[10] employers (and unions) irrationally practice discrimination. Professor Friedman views the employer as a rational person interested in maximizing profits, a thesis which supports the hiring of the most efficient workers irrespective of color or religion. The "best man" theory is simply unsupportable when the evidence is examined. Professor Friedman's view seems to ignore the plain fact that the employer shares the same prejudices as other people. And sharing these prejudices, the employer easily rationalizes his anti-Negro position by noting their lack of skill and claiming that customers, rather than plant policy, force discrimination.

If the employer is unwilling to train a Negro to hold a skilled job, the Negro is unquestionably a less desirable employee than a white person. Current anthropological and medical data does not support the thesis that the Negro, because he is a Negro, is an inferior worker. For example, the Negro construction worker in the South was gradually frozen out, from 1920 to 1950, until he was a minority within the industry.[11] Today, few Negroes in the North or South are skilled builders.

Even the notion that it is the customer and not the employer who is responsible for discrimination is without foundation. One need only turn to the airline carriers as an example. Sometimes claiming that passengers force a policy of discrimination, airline executives refuse to hire Negroes in a flight capacity. But passengers would not know whether a white or black person piloted the plane. Passengers have known black porters on railroads and employ Negro servants in their homes. The flight stewardess serves a purpose similar to the porter and maid. Why wouldn't passengers accept a Negro stewardess? Furthermore, if all carriers employed Negroes in a flight capacity, the customer would have no choice.

To some extent, the male Negro experiences economic injury because of the substantial increase in white female labor since 1910.[12] Women, since 1950, make up more than 50 percent of our total labor force. A growing sector of employment is the white collar force and government, jobs easily filled by the female. This is particularly noticeable in New York City. Because of mounting dissatisfaction with the role of the housewife, it can be anticipated that even more women will flock to industry. Since the 1964 Civil Rights Act forbids discrimination on

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10. *Capitalism and Freedom* (1962), pp. 9, 111-15.

11. Pollitt, "Racial Discrimination in Employment: Proposals for Corrective Action," *Buffalo Law Review*, Vol. 13, No. 59 (1963), pp. 60-61.

12. Hiestand, *Economic Growth and Employment Opportunity* (1964), pp. 10-12.

the basis of sex,[13] a larger number of jobs will be filled by the female in the future. The Negro male, not female, can be damaged by this development.

The following data discloses the nature of the occupational shifts from 1900 to 1965.[14]

Occupation	1900	1965
Professional, technical, etc.	4.3%	11.4%
Managers, officials, and proprietors	5.8	8.4
Clerical	3.0	15.0
Sales	4.5	7.5
Craftsmen, foremen, etc.	10.5	14.3
Operatives	12.8	19.9
Laborers	12.5	5.4

The shift in labor requirements damages the male Negro, who has been excluded from all occupational levels except that of laborer, which is of decreasing importance.

Reports indicate a serious shortage of skilled labor in the construction trades[15] and elsewhere.[16] In spite of shortages, the Negro is unable to drift into most of the skilled trades.[17] Only with the greatest of difficulty are a few Negroes found who are being trained to hold skilled positions. According to 1960 Census data, only 3.1 percent of the total number of registered apprentices are non-white.[18]

Large firms tend to emphasize professional and technical training for employees by encouraging night course work on the college level. On the other hand, smaller firms are more interested in training skilled craftsmen.[19] The Bureau of Apprenticeship and Training, and state

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13. Section 703(a), (h), (c), and (d).

14. Bowen, *Labor and the National Economy* (1965), p. 20.

15. H.R. Rep. No. 1370, 87th Cong., 2nd Sess., 4(1962).

16. U.S. Commission of Civil Rights Report, *Employment*, Book 3 (1961), p. 1; Advisory Comms. to the U.S. Commission on Civil Rights in: Cal., Conn., D.C., Fla., Md., N.J., N.Y., Tenn., Wis., *Reports on Apprenticeship* 16 (1964).

17. "Next NAACP Step: New York," *Broadcasting* (July 29, 1963), p. 91; "Negroes in Apprenticeship: New York State," *Monthly Labor Review*, Vol. 83, No. 952 (1960); "Minority Worker Hiring and Referral in San Francisco," Vol. 81, No. 1131 (1958), p. 1134; Annual Report of the Rhode Island Commission against Discrimination, Vol. 12 (1962); *Hearings Before The United States Commission on Civil Rights*, April 1-7, 1966, pp. 389-510.

18. Groom, "An Assessment of Apprenticeship," *Monthly Labor Review*, Vol. 18 (1964), pp. 391, 394-95.

19. U.S. Department of Labor, Report of a Nationwide Survey of Training Programs in Industry in 1962 by the Manpower Administration, Bureau of Apprenticeship and Training, *Training of Workers in American Industry* (1964), pp. 10-11.

agencies, estimated that in 1962, 159,000 and 55,000 apprentices were in training under federally approved or state approved programs, respectively.[20] Ninety percent of the total number of apprentices were concentrated in three trades—construction at 65 percent, metal at 15 percent, and printing at 8 percent.[21] Moving the Negro into skilled jobs is difficult, because discrimination is notorious in the construction, metal, and printing industries. Discrimination is particularly intolerable because from 1950 to 1960 the number of registered apprentices declined by 25 percent.[22] With an accurate forecast of the increased demand for certain types of labor, the long-run well being of the Negro can be considered and apprentice training properly directed.[23]

The Bureau of Apprenticeship and Training reports 7,000 registered training programs as of 1964; only since 1961 has this agency required operation in a non-discriminatory manner.[24] Of 90 trades currently considered as apprenticeable, there is concentration in 21 trades. In many of the 21 skills—bricklaying, carpentry, electrical, ironworking, painting, plastering, plumbing, roofing, and others—the rate of retirement exceeds the number of apprentices entering training.[25] Why not direct the Negro into these occupations *en masse*? By the public sponsorship of crash programs designed to help the Negro overcome some educational shortcomings, many Negroes could be fitted into skilled trades.

THE MOTOROLA CASE

The possible adverse effect of testing the Negro was recently underscored in the Motorola case.[26] In Motorola, a Negro applicant for a semi-skilled job was given a written test, and the employer claimed that he did not hire the applicant because of a failing score. The applicant complained to the Illinois FEPC, and a hearing examiner orally administered the same test, which was passed. At the conciliation meeting, the employer failed to produce the written test or the employ-

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20. Groom, "An Assessment of Apprenticeship," *Monthly Labor Review*, Vol. 18, pp. 391-92.

21. *Ibid.*, p. 392.

22. *Ibid.*, p. 391.

23. U.S. Commission on Civil Rights Report, *Employment*, Book 3(1961), p. 1.

24. Kheel, *Guide to Fair Employment Practices* (1964), pp. 53-54.

25. Christian, "An Assessment of Apprenticeship," *Monthly Labor Review*, Vol. 87 (1964), pp. 626-27.

26. Kovarsky, "The Harlequinesque Motorola Decision and Its Implications," *Boston College Industrial and Commercial Law Review*, Vol. 7 (1966), p. 535.

ees responsible for testing. The Illinois Commission ruled that the firm had discriminated.

The publicity generated by the Motorola case was unfortunate, because the hearing examiner unnecessarily questioned the validity of testing culturally deprived people. The hearing examiner felt that tests, even without intent, are inherently discriminatory. Since the complainant had successfully completed the test, questioning the validity of the test was *dictum* and unnecessary. The decision of the hearing examiner is an excellent example of why judges often refuse to consider no more than the specific question raised by the case, and narrowly confine their opinion. The test used by the Motorola Company was professionally constructed and not designed to discriminate. Because of the Motorola case, a provision was included in the Civil Rights Act of 1964 which protected the employer who relies on the "professionally developed ability test...."[27]

Another facet of the hearing examiner's decision could have influenced Congress while they deliberated federal FEPC. He felt that an employer has

> a supreme responsibility to move positively to eradicate unfair employment practices in every department.... The task is one of adapting procedures within a policy framework to fit the requirements of finding and employing workers heretofore deprived because of race, color.... The employer may have to establish in-plant training programs and employ the heretofore culturally deprived and disadvantaged persons as learners, placing them under such supervision that will *enable* them to achieve job success.

In essence, the hearing examiner required the employer to take positive steps to help the Negro.

Section 703(j) of the Civil Rights Act protects the employer, union, and employment agency unwilling to take immediate steps to correct past employment injustice. Based upon centuries of slavery and denials of opportunity, Section 703(j) is unfair. In terms of guarding against reverse discrimination—our law and constitution is supposed to be color blind—Congress took the precaution to prevent the start of a different pattern of discrimination. In realistic terms, the Negro cannot be a substantial part of industry unless some privileges are extended or made available to him.

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27. Section 703(h).

TESTING THE UNDERPRIVILEGED

Many employers interested in "scientific" management rely on tests as an objective method of selection. Although there is some difference of opinion, it appears that the majority of experts questions the results of testing a person with an inferior education and background.[28] One author, discussing the validity of testing generally, states:

> The Shuey-Garrett analysis indicates that Negro IQ's consistently run 15 to 20 points below white IQ's; that the Negro lag is greatest in tests of an abstract nature that differences between Negro and white youngsters increase with age, the gap becoming largest at the high-school and college level. . . .[29]

Differences in background show up in all forms of testing. Tests tend to be inherently discriminatory, because questions are unavoidably raised which reach the culture status of each job applicant. Because of ghetto-like living conditions, poor schools, and the absence of a stable family background, the Negro scores poorly on all tests.

Employers and unions with a taste for prejudice can uncover tests which, without design, discriminate against the Negro. Some employers rely on an interview irrespective of the results of a test, and this seems particularly apropos when an applicant tested is close to a satisfactory score. Unions, on the other hand, tend to rely exclusively on tests to determine admissibility into apprentice training programs. Although a union may grant preference for such reasons as relatives who are already members, they do not rely on the interview as a basis for selection.

The 1964 Act approves only of the professionally developed test, and the Equal Employment Opportunities Commission could adopt a *per se* rule, outlawing tests that are not professionally developed—many union sponsored tests are not professionally developed. But there is an aura of mystery as to what should be classified as a professionally developed test. Firms which specialize in testing are unquestionably qualified as professional testers; a test developed by such an agency would meet the standard established by federal law. At the other end of the spectrum, a member of a personnel department, not particularly skilled in testing, may develop a test. Such a test would not meet the requirement of the federal law. In fact, even if employees are technically competent, there is some question concerning the use of the firm-

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28. Allison, *Social-Class Influences upon Learning* (1948), pp. 2-3; 40-41; Cronbach, *Essentials of Psychological Testing* (1949), p. 222; Thompson and Hughes, *Race Individual and Collective Behavior* (1958), p. 223.

29. Silberman, *Crisis in Black and White* (1964), p. 258.

developed test in the light of possible built-in bias. Between the professionally developed test prepared by an independent agency and one prepared by an employee with a limited background, tests can be developed where acceptability under the federal law is a tossup. Since the EEOC is only authorized to conciliate, and is not empowered to make a binding decision, it may be that section 703(h) is not too important. But if disputes involving testing are brought into court, many evidentiary problems will arise peculiar to the courtroom. Most state fair employment laws do not mention the use of tests, and differences could arise between state and federal regulation. Under most state laws a commission could rule that a test is inherently discriminatory. The difficulty is in the courtroom where expert testimony can be presented in favor of and against the use of tests.

The inept language of section 703(h) poses another stumbling block. The federal law only refers to the employer—neither unions nor employment agencies are mentioned. If the terminology adopted by Congress is taken at face value, only the employer is protected when using a professionally developed test. Should a union or employment agency require a test, the EEOC and federal courts could follow the position of the hearing examiner in Motorola, i.e., that tests are inherently discriminatory. The congressional hearings, scantily reported, are of no help, because the intent of Congress is not indicated.[30] Section 703(h) may have been incorporated into the federal law as a political compromise to assure passage of the entire bill; curiously, section 703(h) was not considered important.[31] As a matter of equal treatment under the law, and in the absence of a valid reason for making a distinction, employers, unions, and employment agencies should be placed on the same footing.

Under section 703(h), an employer should not be automatically protected from charges of violation merely because a professionally developed test is used. Capable personnel directors do not find tests absolutely reliable and are aware that they "miss the boat."[32] Under such circumstances, a failure to arrange an interview, call for references, or examine merit ratings may establish discrimination, even if the test is prepared professionally. If all job applicants are tested while white candidates alone are interviewed, a discriminatory intent is discernible. If an employer tests white applicants but turns away Negro candidates for a job, discrimination is established.[33] Should an employer turn to

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30. 110 Congressional Record 13246 (June 13, 1964).

31. Amrine, "The 1965 Congressional Inquiry into Testing: A Commentary," *American Psychologist*, Vol. 20 (1965), pp. 857, 860–61.

32. Yoder, *Personnel Principles and Policies* (2nd edition, 1959), pp. 249, 266.

33. Thompson v. Erie Rd. Co., *2 Race Rel. Rep.* 237, 240 (1956); Whitfield v. Steelworkers Union, Local 2708, 156 F. Supp. 430 (S.D. Texas, 1957).

testing *after* the passage of the Civil Rights Act, this may be sufficient to establish an unlawful motive.[34] Discrimination can be detected when a professionally developed test is unrelated to the job. If a Negro successfully completes a test, and is not hired at a time when the employer is actively recruiting, discrimination is apparent.[35]

In the Motorola controversy, the hearing examiner was convinced that the complainant passed the test. This suggests that the EEOC could find discrimination when the employer refuses or is unable to produce the completed test. The New York Commission ordered the Sheet Metal Workers Union to admit Negro apprentices, and the tests were to be administered by the New York City Testing Center or an equivalent agency.[36] Where there is doubt as to the employer's motives, using an impartial agency to administer a test is a plausible solution.

SOME WORDS OF CAUTION

Admitting Negroes into apprentice training programs and controlling the improper use of tests is not going to lead to an industrial Nirvana. Fifty years ago, the skilled worker was an elite member of society, respected in and outside of the plant. Immigrants swarming to the United States who managed to achieve the rank of a skilled worker experienced personal satisfaction and became influential members of their community. Today, when there is hope that the Negro will be trained as a skilled worker, the symbols of status have shifted. The professional and managerial categories of industrial classification are most esteemed, and the skilled trades are no longer viewed as a mark of recognition. Thus, the Negro who manages to become a skilled worker in the future will not find the contentment of the white worker of comparable skill 50 years ago. Industrial dissatisfaction can be anticipated in spite of the possible improved economic lot of the Negro.

The public must accept and understand the fact that disturbances will continue irrespective of gradual improvement. Only in the long run, perhaps two or three generations, will the unrest abate—after the Negro is part of the work milieu in occupations most acclaimed. The Negro wants no less than that which is customarily available to the white person. However, because of an inferior background, the Negro in the future will find it more difficult to crack the professional and managerial shell than jobs requiring skill.

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34. Silberman, *Crisis in Black and White*, p. 258. The employer, seemingly, would be aware that a test does discriminate.

35. Third Annual Report of the Ohio Civil Rights Commission (1962), pp. 21-22.

36. Commission for Human Rights, 57 LRRM 2005 (1964).

Another significant point is that the Negro must be encouraged to take examinations and apply for apprentice training.[37] Negroes, distrusting the employer and union, and often unwilling to acknowledge that they fear performing poorly on tests, shy away from applying for admission to a training program requiring a test. Because Negroes attend inferior schools and fail to complete a grammar school or high school education, government and private understanding and promotion is essential to encourage and prepare them for full industrial participation.

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37. Cooks v. Cannons Union, Local 991, 338 F. 2d 59 (CA 5, 1964), *cert. denied*, 330 U.S. 975 (1965).

DISCUSSION

ERNEST GREEN
WORKERS DEFENSE LEAGUE

First, I would like to disagree with one of Professor Kovarsky's points of historical analysis. The effect that Booker T. Washington's philosophy had on the entry of Negroes into skilled craft areas is at best minimal, for it limited them to a few trades. The main reasons for such a lack of Negro participation in apprenticeship was, and still is, discrimination on the part of the unions and the desire not to enforce equal employment standards by the federal government. We need only think of the philosophy advocated by W. E. B. Dubois, which was one that involved the total participation of Negroes in all types of employment, to see that whites were and still are accepting only that which reinforces their own thinking.

However, we are not here to discuss the historical background of discrimination in the building trades, but the present state of affairs. From the discussion of other participants in the conference, I would have to title myself as one who is interested in short-term results, because the problem of Negroes and apprenticeship is immediate and pressing. The black communities want immediate results, not just more institutional changes.

I point up all of this as background to the Workers Defense League Apprenticeship Program in New York. We run an independent, privately funded program on a budget of $30,000 a year with only four staff members. We have been able to locate qualified Negro applicants for any union situation. We have placed 14 sheet metal applicants into the top 23 spaces of the last sheet metal apprentice class—this was out of 20 people tutored.

We operate as an information center; our services include recruiting, tutoring, counseling, and following up each applicant placed. We feel that an organization must be independent and aggressive. It must be independent because the government agencies entrusted with enforcement and recruitment have not done the job in the past and, from most recent evidence, are not doing it now. I refer specifically to the State Employment Services and the Bureau of Apprenticeship, both state and federal agencies. A workable program must be located in the area it is to serve and be aggressive enough to fight all aspects of the "house of apprenticeship."

Since we are located in New York State, the regulations governing apprenticeship are a bit stronger than the federal regulations. The unions are required not to rely solely on test results and also to use independent testing services. The Apprenticeship Program would be the last to advocate going back to the old method of selection as opposed to testing. As long as the applications are open and the test is one to measure general aptitude, we know that the applicant can be prepped to overcome whatever academic deficiencies he may have. We regard the test mainly as a barrier to keep out Negro applicants, and we simply overcome this barrier.

As of yet I have not seen many unions, employers, or Joint Apprenticeship Committees give preferential treatment. In this day and age no one can convince the Negro community that skilled craftsmen jobs are going to be handed to them by the good graces of some building craft union. We were able to make direct placement into an International Brotherhood of Electrical Workers local simply because we had qualified applicants, and were able to show the union their qualifications. But this is very rare, and it is the only large-scale incident. We have placed elevator constructors, painters, and ironworkers directly, but the bulk of our placements have come through the test situation.

It seems to me we have a very immediate problem to be solved; and the resolution for the question of testing may take ten years or longer for the necessary government agencies to make it an effective instrument. The black communities want to see black faces on the construction sites now. In most cities we are talking of no more than 2,000 openings, and certainly there are enough Negro applicants (high school graduates) who can fill, or at least apply for, these existing openings. From most of the conversation here at the conference and elsewhere, the problem has not been placement, but the fact that Negro applicants cannot be found. At least we have eliminated one thing in New York: that is, the myth that "there are no qualified Negro applicants."

The job opportunities available to Negro high school graduates who are not bound for college are minimal in most cities. An average salary for applicants registered with us is $1.55 per hour. Also, the average Negro college graduate makes in a lifetime about the same as the white high school graduate. All of this makes it impossible for us to see why they cannot be found, and also why Dr. Kovarsky feels that Negroes will not apply because skilled craft openings imply a loss of status. When one figures that most skilled craftsmen make at least $10,000 a year in salary, and the number of Negro college graduates making this amount of money is extremely small, the black youngster is hardly concerned about loss of status.

From the results that we have obtained through our small project, we know that the Negro youngster can gain entry into apprenticeship openings. However, it cannot be done without an independent aggressive operation similar to the Workers Defense League Apprenticeship Program.